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THE New York *Commercial Advertiser* asserts that notwithstanding the almost unprecedented activity of building during the past year, thousands of men belonging to the different building trades are now out of employment in that city. There is, among real-estate owners there, a general feeling that carpenters' and masons' wages are too high, as compared with salaries in other employments, and with the cost of living, and in anticipation of the fall which is regarded as sure to come, hundreds of projects for building have been postponed. The winter is usually a dull season, but the temporary postponement of so many improvements has brought about a stagnation almost complete. The little work that still goes on is done by men from other places, particularly from Canada and New England, who are cut off by their more severe climate from work at home during the winter, and are glad to earn wages considerably lower than those fixed by the New York Unions. The *Commercial Advertiser* thinks that the Unions should recognize the difference in the demand for labor between winter and summer, and should provide a lower scale of wages, which could be accepted by their members at the season when cold weather and short days make their labor at once less needed and less valuable, without incurring the penalties attached to the violation of the Union codes; and although we are very far from wishing to see the incomes of the most useful members of the community diminished, it is plain that high wages during eight months in the year, and enforced idleness for the rest of the time, amount to less in the end than regular wages through the whole year, graduated according to the demand. Many stone-masons and bricklayers, who dare not, for fear of the Unions, work for less than the schedule rates, and who cannot find employment in winter at those rates, leave the country altogether, and pass the dull season in England or Scotland, and this winter the number of mechanics crossing the ocean eastward is said to have been exceptionally large. The cost of a voyage in the steerage to Liverpool or Southampton is hardly more than that of living in New York for the same length of time, and, once landed, the skilled workman is pretty sure of employment, at rates about which he is free to exercise his own discretion; while an opportunity is afforded him, when spring opens, and work at high wages waits for him in New York, of making money enough to pay his passage both ways by purchasing in England a liberal outfit of clothes and tools, and selling them in New York, after passing them free of duty through the Custom-house, at a handsome profit.

SOME slight movements have taken place in the City Building at Philadelphia, due to the gradual imposition of the great weight of the tower upon the masonry below, which, although not serious, are of interest to architects and builders who have to deal with large buildings. The tower, as our readers will remember, is to be the highest structure in the world, next to the Washington Monument, and being of very solid construction its weight is enormous. The piers and foundation on which it rests have been carefully calculated, according to the testimony of Mr. McArthur, the architect, so that the strain upon them nowhere exceeds nine tons to the square foot, but even with this prudent limit of compression there has been a settlement of the more heavily loaded portions, which has cracked and broken some of the beautiful polished and sculptured stone in the interior. Mr. McArthur attributes this effect, no doubt correctly, to the filling of the horizontal joints above and below the polished and carved stones out to the face of the stone. The brick backing settling most, the pressure of the walls is concentrated on the facing-stones, and the mortar between their exterior edges, hardening first, serves to intensify the strain upon the angles, which have "flushed," or split off. If the foremen of the masons had seen that their men laid these joints "slack," so as to relieve the pressure at the extreme edges, the work would probably have remained intact. On the outside, in the same way, several long stones, forming the architrave of a massive string-course over a row of arched windows, have broken in two, just over the keystones of the arches, by reason, evidently, of the settlement of the piers between the windows, in which one end of each architrave block was engaged, while the middle was held up by the less weighted key-stone. This is an effect so common in such situations that one would think that masons might learn to leave the mortar out of the bed of such stones until the structure had settled, or else to make a joint over the key-stones of the arcade; but heavy building is not yet common enough in this country to enable architects to rely upon the knowledge of contractors or their men.

THE city of Toronto advertises a competition for designs for a new court-house, under terms which in some respects merit special commendation. Although far too short a time is given for preparing the designs, it is agreed that the drawings, with the description and estimate accompanying each, shall be submitted to a jury of three experts, to be named by the committee having the construction of the building in charge; and the report of a majority of the members of this jury is to be accepted by the committee as final, and will be "by it strictly adhered to." It is furthermore agreed without reserve that the author of the design selected as the best shall be entrusted with the carrying out of his design at a commission, not of five, but of four per cent, on the contract price. This curious docking of one-fifth of the architect's pay is probably the work of one of the cheap economists who infest city councils; and as the town is likely on account of it to forfeit all hope of interesting architects of ability and respectable character in its competition, we hope for its own sake that it will see fit, while there is yet time, to bring this item of the invitation into conformity with the intelligent and honorable spirit of the rest, and restore the rate of compensation promised to that recognized all over the civilized world as only fairly remunerative.

WE are glad to see that a peculiarly mean corporation has unexpectedly met its deserts in England, while trying to deprive an architect of his pay by means of what was intended to be simply a shameless swindle. The corporation in question, which deserves to have its name held up to scorn, was the School Board of the Great and Little Clifton District. This Board employed an architect to make drawings for a school building, and to superintend their execution. He performed his duties, so far as appeared, to the satisfaction of the Board, and then applied for his pay; but it was refused, and on bringing the case into court he was met with the cool response that his appointment, which was made by a vote of the Board, recorded on the minutes, and signed by the Chairman and the Clerk of the Board, was not sealed, and was therefore not valid; under the statute which provides that contracts of corporations, relating to matters involving an expenditure of more than fifty pounds, shall not be valid unless sealed with the corporation seal. One or two cases of the kind have already been decided in favor of the corporations claiming this protection, but in the present case the corporation, being a School Board, was subject to special regulations, provided by the law, and explaining or modifying the application of the general statute. Fortunately for the poor architect, one of these special regulations, which the crafty School Board had overlooked, expressly provides that the appointment of any officer of such a Board may

be made in the way in which the architect was appointed, and that an appointment so made shall be as valid as if made under seal. The architect, in the opinion of the judge, was an officer of the Board, and his appointment was therefore valid, and he was entitled to judgment in his favor.

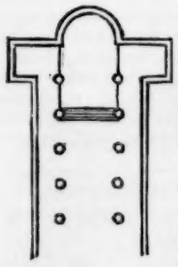
THIS is only one among the numerous cases which come to our notice where architects, particularly the younger ones, are, to speak plainly, cheated out of their hard-earned pay on pretexts of the most flimsy and absurd character by persons who know the cost and annoyance in which a suit involves a professional man, and believe, with reason, that the poorer man will swallow his disappointment, and try to make up his loss by extra labor, rather than appeal to the law for redress. As a protection against the devices of these churls, we believe that such an association as the French Caisse de Défense Mutuelle offers a very great advantage. One of the first duties, for instance, to which the officers of this society have applied themselves is the collection, under the guidance of two eminent lawyers, of records of all adjudicated cases relating to matters of building or professional service. This collection is to be indexed, and reports of new cases added as soon as they appear, so that the member who feels himself in doubt as to his rights has only to consult the officers of his society to be informed, both as to the propriety of his claims, and the best method of enforcing them; and if he is compelled to attempt the latter, the society will undertake the case for him, paying all the court costs and counsel fees, and carry it through to a verdict, handing over to him the amount collected, less a certain small reserve to be added to its own funds. The improvement which such an association is capable of making in the business prospects of architects, particularly the younger ones, can hardly be realized, except by those who have the trials and disappointments of their early practice fresh in their memory, Apart from the management of suits, which need not be frequent, the fact that every young architect of good professional standing was backed by an association with ample funds, ready at a word to undertake the enforcement of his rights without any sentimentality or bashfulness, would secure for all the respectable members of the profession a considerate treatment, and an appreciation of the fact that their services must be paid for, which even the best of them do not now find universal. The bright example of the abler men has brought about a great change in public opinion within a few years, but there are still, thanks to the abuse of the competition system, plenty of people who pretend to believe that architects expect to work for nothing, and to put up with barefaced robbery from those who are rich enough to frighten them by threatening them with lawsuits. The time has quite come for administrating a few wholesome lessons to these gentry, and thereby completing the change in the popular idea of the rights of architects, and in no way that we can see can it be done so well as by a Defensive Association such as we suggest. With the example before us of the French society, managed by the most distinguished architects and lawyers in France, we could hardly go far astray, and the two societies could render each other invaluable assistance.

THE preparations for the Paris Exposition of 1889 have advanced as far as the selection of a site for the buildings, the Champ-de-Mars, the place of the last exhibition, having been chosen unanimously by the Commission. For competitive trials, and other matters where much space is required, a sufficiently large territory will be reserved at Vincennes. Although Vincennes is at the other side of the city, there is no real objection to separating the experimental part of the exhibition by a considerable distance from the mere show. In fact, each department might be in a separate quarter of the city with positive advantage to those who go to the exhibition to learn, rather than to stare at a huge jumble of things which do not interest them in the least. The choice of the comparatively small Champ-de-Mars will save a considerable expense in construction, the Trocadéro Palace, which formed one of the principal buildings of the exhibition of 1878, being close by, while the ground has already been graded and prepared for the purpose. For foreigners, who do not care how much money is spent in amusing them, this is an unimportant matter, but they have a reason of their own for being glad that the old exhibition ground is to be used again, as it is far more easily and pleasantly accessible than any suburban village could be, and is surrounded by beautiful and interesting objects. To our mind, recalling the dreadful weariness of the journey among the Fairmount Park buildings, it seems extremely important to plan the group of exhibition halls as compactly as possible. Notwithstanding the conveniences of electric railways and other means of transportation, one has in hot weather a certain repugnance to crowded cars, even for a brief journey, and we imagine that it might be quite possible to plan buildings in direct communication with each other, where every kind of natural and artificial product could be shown in perfection. We could also, for our part, dispense with the houses and side-shows which took up so much room at Philadelphia and Paris. There is obviously no necessity for lodging the foreign commissioners on the grounds, and national taste in architecture could just as well be shown in the decoration of rooms in the main buildings, which could serve as restaurants or exhibition rooms, as in separate structures. In fact, there is nothing which we should like better to see than a series of rooms, not built for the purpose of advertising somebody's concrete blocks, but decorated by the best artists and architects in each country in emulation of each other. We have a fancy that our own country would come out of such a struggle with no small credit, and the idea has never been carried out on a large scale in any exhibition.

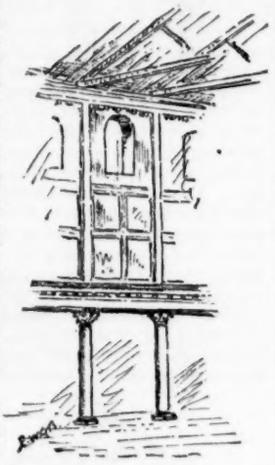
AN important scheme is said to have been entered into by some of the railway companies in New York, for cutting a tunnel under the East River, from Ravenswood, on Long Island, to Blackwell's Island, and thence to the New York shore. This tunnel is to be built for the benefit of the Long Island Railroad, which will by means of it gain an entrance into the city, and an agreement has been made with the owners of the Grand Central Station for admitting the Long Island Railroad to the use of that station as soon as the tunnel is completed. The bed of the East River is of hard rock, and the tunnel, although not a long one, will be very costly, so that if the project is seriously entertained it is perhaps only a part of some plan for raising the Long Island Railroad from a local line of very limited traffic to the position of a link in a chain of communication between New York and Europe. It is quite likely that the next ten years may see some improvement made in the present circuitous route from New York to Liverpool by way of Sandy Hook, and whether the future steamship route lies through Long Island Sound to Harlem, or ends at Montauk Point, passengers, at least, are likely to choose railway transportation from the eastern end of Long Island to New York.

PROFESSOR BELL is said, in a paragraph which is going the round of the newspapers, to have recently expressed the opinion that the telephone has not reached the utmost limit of development, and to have suggested the possibility that some improvement might yet be made in the service afforded those who use it. We are sorry to say that the history of the telephone business does not give very flattering hopes of the latter contingency, but that the telephone is capable of development no one will doubt. To mention one point only, the sound delivered by the telephone receiver is estimated to be of about one twelve-hundredth of the force of that communicated to the transmitter; and as it is our fortune to speak through the telephone to a good many persons whose natural voice has a force amounting to not much more than twelve hundred times a dead silence, we should hail with joy the adoption by the telephone companies of any device for magnifying the sounds transmitted through their instruments. Together with this should come facilities for communication through long distances. Nearly four years ago we were told by officers of the telephone company that they "talked between Boston and New York every night;" and that the opening of public communication between those two cities was a question of a few weeks only; but although the same hopeful spirit pervades the announcements of the company, the advancing years do not seem to bring long-distance talking within the reach of its subscribers. From other quarters we hear reports of communication, by means of other telephones, which is wonderful as compared with the operation of the instruments with which we are familiar. With one, for instance, conversation has, it is said, been easily carried on between New York and Chicago, a distance of nine hundred miles, and, more recently, communication is said to have been held between Boulogne, in France, and St. Petersburg, a distance of more than sixteen hundred miles.

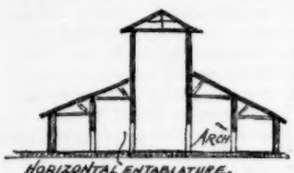
A SKETCH OF THE HISTORY OF ARCHITECTURE.[1]—II.



IN point of time we have now reached the middle of the fourth century, A. D. During these 350 years, the Christian religion was slowly and surely gaining ground, and the old worship of imaginary deities dying out. When, in the time of Constantine, the persecuted and scattered church, finding favor with the Emperor, emerged from the catacombs, no buildings were so suited for their services of worship as the basilicas, and no others were large enough to hold the masses of people, who, attracted by the bold preaching and curious rites of the new religion and its followers, thronged together to see and hear for themselves. The bishops and priests naturally took the seats provided for the magistrates, and the altar, still in its original place, served for the performance of Christian rites as it had done for heathen. At the end of the fourth century changes were introduced. The apse was first railed in, and then the altar, and the dais on which it stood, and which projected beyond the precincts of the apse. Finally the choir was formed, extending into the nave, and raised two or three feet above the floor of the rest of the building. The first Church of St. Peter, at Rome, erected at this time was a good example of the peculiarities of these reformed basilican buildings. The plan of the church proper is rectangular, having at one end a sanctuary, corresponding to the Gothic chancel, extending beyond the north and south walls of the nave.

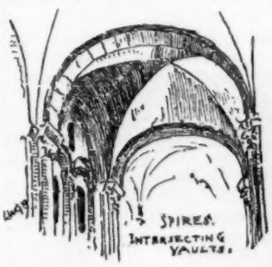


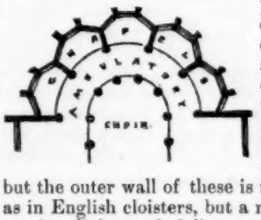
The nave was divided into five aisles, by rows of pillars supporting a horizontal entablature, above which rose a double range of panels, each containing a picture, and corresponding with the triforium of later date. Above these again was a clerestory, and then an ornamental belt or cornice, and above that the wooden roof left open to the ridge. The columns in the *side* aisles were joined by arches.



Externally the basilicas were very simple in design. The walls were of plain, unplastered bricks, and the windows had plain, arched heads, without any attempt at decoration. The front façade was slightly ornamented with two rows of windows, three in each tier, and between and above these were painted in fresco on stucco, various emblematic figures. The whole was surmounted by a coved cornice, which appears to have been almost universally applied. In the Church of San Lorenzo, erected about 540, a triforium gallery was constructed, but this did not find favor with the architects generally, as it never was used in other churches. The church of Ravenna, San Apollinare in classe, shows a great advance in the style, although it is still easy to trace the derivation of every detail from the Classic model. Another specimen of the transition is at Parenzo, in Istria; it possesses all the usual arrangements of a church of this date; but some of its pillars are of the Corinthian order, while others are of pure Byzantine type. The Romanesque architects never attempted to vault their rectangular buildings, but frequently constructed domes over their circular ones. But here again the Italians differed from their forefathers of Constantine's day, for the interior of their domes was not the outline of their buildings. The dome was by them simply used as a ceiling, and was covered with an external wooden roof. True Romanesque had nearly come to an end with the sixth century, from which period to the commencement of the ninth century, a time of continual wars, there was little opportunity to cultivate the arts of peace. The next two centuries, from the ninth to the eleventh, saw but tentative efforts in the advance of art, but in the eleventh century we find that Gothic art has freed itself from the early traditions, cast-off Classic details, and is going steadily forward with a well-defined object in view.

We must take up our study in the south of France, and commencing with the Province of Provence at the early part of the ninth century, the first new feature that attracts our attention is the stone vaulting of the churches. The plan is still the same, though slightly elongated, and not so wide as the basilicas of Rome. All the churches of this province from the date of Charlemagne can boast of vaulted naves, and this, too, on the principle of the pointed arch. The architects had great difficulties to contend with, and to follow and trace the various steps, in their progress towards the attainment of their ideas of correct stone roofing, forms one of the most interesting studies in the education of an architect. The introduction of the pointed arch at this date (820), is, as we have said, the principal feature of the architecture of the south of France. And the reason for its use is easily seen. The cathedral at Angoulême has three domes along its nave supported by the side walls, and by semicircular arches dividing the whole length of the nave into three squares. This arrangement answered very well as a roof, but was not pleasing either internally or externally in general effect. And with these domes it was impossible to use the one covering to the nave for ceiling and roof. The domes made in proper proportion with the interiors appeared stunted and sunken on the exterior. Shams are never permitted in true art, and so long as there was felt to be a want of truth, so long did the architects struggle until their aim and object was attained. It took years to accomplish, and the lifetimes of generations were spent in the study, but each man added some little step in the right direction, and the end was at last reached. Oh, happy he, who had the satisfaction of completing the discovery! The object to be attained here was one covering—not a ceiling and a roof, but the two combined. The annexed diagram will show the difficulty, and the result attained by the introduction of the pointed arch. If a semicircular ceiling be used, in order that a sufficient water-shed may be obtained, an immense weight must be applied to the crown of the arch, but in the use of the pointed arch all this is done away with. With regard to the plans, a passage round the choir was considered an essential, and this is the commencement of that exquisite arrangement known as the *chevet* of Gothic cathedrals. In order to have this passage within the walls of the church, a screen was erected round the choir, wholly independent of the construction of the church. Later on, chapels were erected, opening into the passage thus provided, and the most perfect and beautiful effect ever produced by Gothic architects, and which perfected the plans of the cathedrals was now wrought out. Most of the churches being collegiate, cloisters are of frequent occurrence, but the outer wall of these is never in the form of unglazed windows as in English cloisters, but a range of small and elegant pillars supporting light and delicate arches is the universal treatment. Spires were occasionally erected, but to the western walls was given the principal decoration. In the Province of Auvergne we find a large number of square towers, many standing quite separate from the churches, but each church has its central tower, while in Anjou, spires are in common use. As a general rule, the churches have only a simple tunnel-vaulted roof over the central aisle or nave; but the semi-vaults of the side aisles are constructed to form a solid abutment against the thrust of the main roof. The side aisles were formed in two stories, the upper of which was an approach to the triforium of later years, and admits light through large windows in the outer walls, but as yet the clerestory had not been developed.



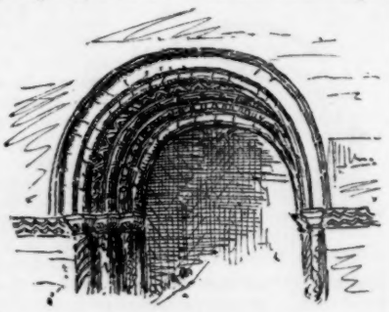


In Burgundy, we find another step has been taken in the progress

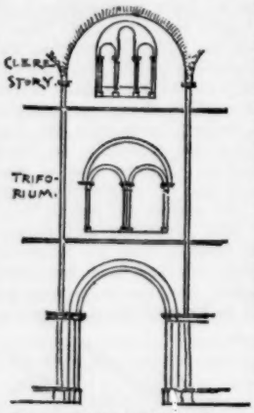
[1] A Sketch of the History of Architecture from the commencement of the Grecian Art to the Reformation in England, by R. W. Gambier-Bousfield, A.R.I.B.A. Continued from page 18, No. 472.

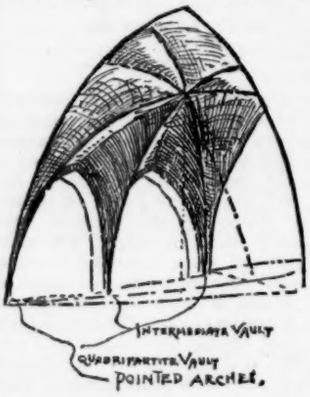
of vaulting; bold transverse ribs and plain intersecting vaults are added to the common tunnel-vault, but the semi-vaults, as in the South, are still used as abutments. But the same difficulty presented itself in roofing the intersecting vaults, and the architects were forced to use again the external wooden roof, but this was no longer a sham, one dome over another, which might be thought to be simply the exterior and interior of the same dome, but the roof was made of an entirely different form, and carried up at an angle from the wall-plates until the two sides met in a ridge, and thus the vaulting became again a ceiling, as in the early Romanesque.

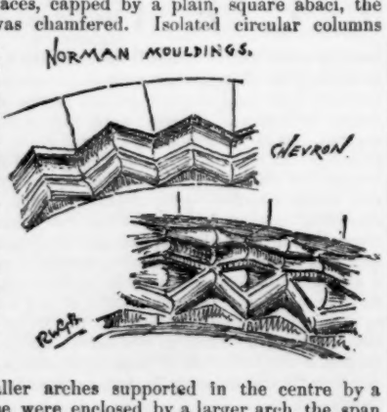
In the north of France we find that a very great stride has been taken towards perfection in the architecture of the cathedral, and other monastic churches. That which is commonly known as the "Latin style," has very many departures from the old lines, and taking, as an example, the Church of Moutiérender, near Vassy, to the east of Paris, we see that the characteristics are the subordination of the side aisles to the central one, and a perfectly-defined clerestory. The nave, or body of this church dates from the eleventh century, and is perfectly plain and devoid of all ornament, either painted or carved; but the chancel, rebuilt in the thirteenth century, is an almost perfect example of true Gothic. In this church almost every step can be traced from the Romanesque, and one sees at a glance what rapid progress has been made in the art in the three hundred years. Every part of the later choir is fitly ornamented, and though in many of its details there was great room for improvement, the style as here represented is complete.

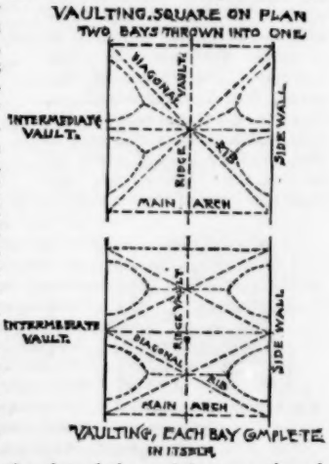


The history of the round-arched, or Norman Gothic architecture, may, with only a few exceptions, be comprehended within the space of one hundred years. No building in this style is known to have been commenced before the year 1050, and before the year 1150, the pointed Gothic had been thoroughly elucidated in the Norman Province. The Norman style embraces the very plainest, as well as the very richest work, from that characterized by the low square pillars and circular piers, to the florid decoration of which so many examples are to be found in England. The former of these exhibit but massive and clumsy remains of Classical principles, but they display a grandeur and solemnity of appearance, consequent upon the solidity of the masonry, and the smallness of the openings. The piers of the earlier buildings were either entirely square, or else a succession of receding faces, capped by a plain, square abaci, the lower edge of which was chamfered. Isolated circular columns were also used, but at later periods portions of columns were attached to the square piers, and those facing the nave were carried up to the clerestory windows, and from their capitals sprang the ribs of the roof-groining. The arrangement of the bays in Norman cathedrals usually consisted of three tiers. The lowest opening was spanned by one semicircular arch. In the second tier or triforium were two smaller arches supported in the centre by a slender column, and these were enclosed by a larger arch, the span of which was rather less than that below it. In the third, or clerestory, there were generally three arched openings divided by small shafts, and forming either a window or an opening before a window in the thickness of the wall. These three arches occupied a space equal to the arch below them, and were enclosed in an arch, springing from a shaft which was attached partly to the wall, and partly to the shaft that supported the springing of the groining. The western and southern doorways appear to have been parts upon which the greatest amount of enrichment was bestowed. The arches were composed of a succession of receding arches enriched with bold mouldings resting on caps, under which were ornamented shafts and bases. The finest example of Norman Gothic as it was perfected in France is at the great Church of St. Etienne, Caen. This is three hundred and sixty-four feet long now, though originally it is supposed to have been shorter, and to have terminated in an apse. A *chevet* was added about a century later. At the western end was the principal entrance (lateral entrances were not used at this date), and this was flanked by two towers. This, later on, became a most important feature in French churches; but it was not confined to the west end, when side entrances were introduced, they were treated in a similar manner. The attempt made to erect towers at the intersection of the nave and transepts was not successful, and was finally abandoned in favor of towers and spires rising from the ground, at the ends and sides of the buildings. Up to this time churches in Normandy possessed simple tunnel-vaulted roofs, copied from the South, but that which was admissible in the bright South would not suit the northern provinces, and larger windows were found to be a necessity. Several attempts were made to meet the requirements, but they found a difficulty in piercing their walls without weakening the supports of the heavy roofing. They began by erecting their piers of greater size, until they were in themselves, strong enough to resist the thrust of the vaults. They next erected a quadripartite vault, making a square of the width of the nave, ignoring the intermediate shaft, and throwing a single arch across to every other pier. This was not satisfactory in its appearance, and a compromise was adopted, and a sort of intermediate vault spring from alternate piers was introduced. This gave the necessary height to the side walls, and consequently plenty of window space, but though mechanically correct, from an artistic point of view it was very unpleasing. But in spite of all the ingenuity expended upon it during this hundred years, nothing was arrived at that could be called perfectly satisfactory. And now we come to a very important point in our history, and one to which particular attention should be paid. Our architects had recourse to the *pointed arch*, and the problem was solved. This feature enabled them to raise the side walls where they pleased, and the plan of the groining was altered, so that each bay was complete in itself. Great progress was made during the twenty or thirty years that elapsed between the erection of the Church of St. Etienne, and that of the Abbaye aux Dames. The triforium at the former was a great gallery, but in the latter was reduced to a mere passage. The bare spaces on the walls









were felt to be in need of decoration, and the stones were carved in simple geometrical patterns, which had hitherto been only painted.

THE EXCAVATION OF OLD BUCKFAST ABBEY.

THE work of bringing again to light the foundations of of the Cistercian Abbey of Buckfast, in Devonshire, which was begun in December, 1883, has an interest which may well extend beyond the limits of England. To the student of the past, the remains are like illustrations to the history of the reign and fall of the monastic power in the island; to the architect the peculiarities of construction in the church, and the fragments of carved stone, which show every successive style from Norman to late Perpendicular, have also a distinct professional value; while to the uninitiated but thoughtful observer, to whom impressions are the compensation for technical ignorance, the ruined abbey, with its monkish owners under a vow of silence, will have the singular charm which belongs as much to its remoteness from that world which is too much with us, as to its traditions of another faith, among generations with other thoughts, aims, and standards than our own.

Of twenty-six monastic houses in Devonshire suppressed at the Dissolution, Buckfast, and Tavistock Abbeys were the only ones which dated from before the Conquest. The reason for this is, briefly, that Benedictine monasticism in the west of England was much more slowly developed than in the east, the Saxon conquest of Devonshire not having been completed until the middle of the eighth century. The Saxon was the friend and champion of the Benedictine monk; the native Briton, his uncompromising foe. The Saxon brought in Roman priests as he advanced; the Celt sullenly fell back inch by inch before them. Still "on the day, when King Edward was alive and dead," to use the picturesque language of the Doomsday Book, the lands of Buckfast were vast and scattered, of almost the same extent in the reign of the Confessor, as in those of Henry VIII. Among the items of property, owned by the Abbey in the reign of the former king, were six hundred and seventy sheep, which is an indication of what was afterwards its chief source of wealth, namely: wool and woolen manufactures. This latter industry still remains, for a large wool factory, built on the site and out of the materials of the ancient abbey, seems by one of *Times's* pleasantries, to be flourishing upon the misfortune of the former masters.

Magnificent indeed, must have been the abbey buildings in the days of their greatness, covering several acres of land, owning nine manorial estates, which extended for miles around it; the abbot ruling over all as a feudal lord, having the power of life and death.

A traveller, one Mr. Laskey, in the *Gentleman's Magazine* for 1796, has left a valuable account of what he saw there in that year, but the masses of stones piled one upon another, which he describes have disappeared, in spite of his prediction that they were likely to remain in that state for ages to come. Mr. Hamilton marks [1] very clearly the three distinct monastic revivals which the abbey has seen, the first being between 1112 and 1145, when, through some circumstances which do not appear to be clearly understood, the abbey was incorporated with the Benedictine Congregation of Savigny, known as the Gray Monks; and it was at this time that its connection with the House of Pomeroy began. Ethelwerd de Pomeroi did not indeed institute the monastery, the origins of which were Saxon, although several ancient accounts of Buckfast give him the credit of so doing; but the grateful monks, after the manner of the Greek panegyrists, ascribed to him this honor, on account of his munificence to the Benedictine house; for, as we shall endeavor to prove, architectural history shows that the abbey whose foundations have just been laid bare was erected at this period.

In 1148, however, the thirty monasteries forming the Savigny Congregation, passed into the hands of the Cistercians, whose head, St. Bernard, was still living. The golden age of that reforming sect had just begun; the first fervor of an enthusiasm to purify monastic life from all touch of worldliness was upon the monks of that Order. Furs, rich skins, superfluous habits, soft beds, the "use of fat bacon, and other like extravagancies" were to be far from them. They wore no shirts, ate no meat except in grievous sickness; no fish, eggs, milk nor cheese, unless on extraordinary occasions; they rose at midnight, sang psalms until daybreak, and spent their days in labor, reading or prayer. Empty conventionalities and dead forms were swept from their foundations by this advancing tide of passionate conviction. The Order had one hundred and nine monastic houses in England alone at the close of the fifteenth century: Waverley was the first, Tintern, Fountains, and Furness were others; nineteen years after Waverley, Buckfast passed under this rigid rule. Mysterious and stern the Order of St. Bernard seems to us; its votaries lived under a vow of silence; yet one has written of it that the dying monk passed from the joys of Clairvaux to the joys of Heaven.

[1] "*Buckfast Abbey.*" A pamphlet by Rev. Adam Hamilton, O. S. B., 1884.

Certainly Buckfast Abbey flourished at this time. The woolen trade began; the kings, one after the other, confirmed the charter of its privileges, all but King John, who appears to have been a little erratic in his dealings with the clergy; and it had one slight disturbance from King Edward I, who summoned the abbot to give reasons for his many claims to privileges, but who afterwards dropped the subject. Once this latter king came to Buckfast for the night, doubtless for pecuniary rather than religious reasons, and the old arch under which he passed is still standing over the roadway. But although these were the great days of the abbey, from the worldly point of view, yet they marked its decline. The rigors of the monastic life relaxed steadily under all this prosperity; wine was allowed among the monks; no more dinners of beans or peas were served on the refectory tables; and they could see no longer any religious virtue in "digging in the earth, cutting wood, or carting manure." Many people of culture and good family entered the abbey now, where meat and wine were to be had freely, combined with education and spiritual advantages. It became a seat of learning, but for a short time only. Gradually the number of monks dwindled away; the immense abbey had only thirteen when the Dissolution came. "Piety groweth cold, but few persons come to religion in these days," wrote a mournful Buckfast monk, as early as the year 1400. [2] It is almost pitiful to read in the old chronicles the little items which tell so surely of a steady decay; the broken silence which passed uncorrected, the aged abbot whose government was taken out of his hands by the brethren; the continual petty lawsuits between the abbots and their neighbors about the stealing of rabbits, and the blocking up of fishing-ponds. Yet, on the whole, the century preceding the Dissolution was a peaceful and uneventful time. The monks appear to have been generally kind and benevolent to the poor about them. If the enthusiasm of a fervid faith was passed, evil and excess did not come in its place; no scandal attaches itself by chronicle or tradition to the failing greatness of Buckfast. The rushing wind of the Spirit had become an idle summer breeze.

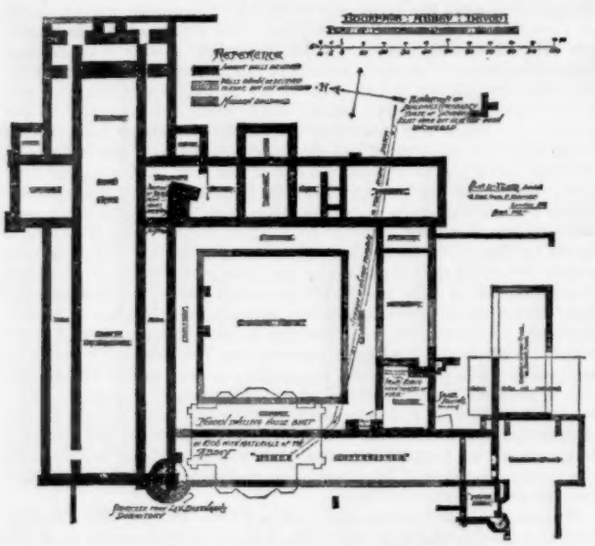
The day of little troubles was over in 1535. In that year the visitors appointed by King Henry VIII, made their appearance at Buckfast. The abbot was dead; they appointed one Gabriel Donne in his stead; a worldly man, with an eye to the main chance he seems to have been, and he surrendered his abbey to the king in 1538, receiving an ample pension equal to $9,000 at present. [3] All the monks were allowed lesser sums yearly, except the prior, who received nothing, which seems to show that he did not agree to the act of surrender. Then the monastic buildings were promptly sold to Sir Thomas Dennels; the lead was stripped from the roof and disposed of; the five bells went with it, and the abbey buildings were left to the gentle death of time. But round them raged the battle between the old faith and the new. There was an attempt in 1549 to force the Protestant service upon the county. The people rose to arms, led by a descendant of those Pomeroys who had for centuries been the abbey's friends; ten thousand peasants took part in it. Lord Russell marched against them, defeated them, burned and wasted the country for miles, and killed four thousand of the people. The Roman Catholic leaders were executed, and the last flicker of the spirit of the early religion was extinguished. The abbey passed from hand to hand until 1806, when a Mr. Berry bought it, levelled most of the walls remaining, and built a new house out of the materials. This building was purchased in 1882, by Benedictine Monks of the Primitive Observance, who had been expelled from France in 1880; and there they have retired to their strict and silent life, the first Order to restore a monastic house in England since the reformation, and the third revivers of the ancient faith within Our Lady of Buckfast.

Except the archway over the road, virtually all that remains of the old structure is what is known as the Abbot's Tower, an ivied ruin which joins the north side of the newly-erected chapel, and this is believed to have served as an angle of the monastic buildings, the tradition which makes it the abbot's quarter is, of course, architecturally impossible. It is of the fifteenth century, more modern than the arch, and contains much that is interesting. It is 19 feet square, and about 40 feet high, although the turret staircase at the angle rises about 10 feet higher. The tower was divided in the monk's days by three floors into four chambers of varying heights, which are clearly indicated by holes where the massive beams were formerly inserted. The two upper stories were provided with fireplaces, now much mutilated, and with quaint little windows at the sides. The almost ruined stone tracery to the large windows of the upper chambers still exists, but that of the lower window is completely destroyed, only the rough jambs and relieving-arches remaining to show its former position. No fireplaces appear in the two lower chambers, which were not so high in the walls as the others. In each of the four rooms is a rough opening where was formerly a door leading into the adjoining buildings. The spiral turret staircase is quite perfect from top to bottom; the doorways opening from it into the chambers are all destroyed, except the top one, which still keeps its original stone jambs and lintels. A curious and picturesque feature of the tower is a series of latrinal chambers, opening out of each of the three upper rooms. A stream of water, an arm of the Dart, once flowed beneath a part of the abbey buildings adjoining the tower, and a portion of the rough arch vault over it was to be seen until quite recently. A continuation of the same vault is known to be still remaining under the modern Abbey House. The tracery of the upper windows, before

[2] *Sloane Manuscripts*, in 513, British Museum.
[3] "*Historical Collection relating to Devon.*"

spoken of, is of freestone, and shows very beautiful and delicate details, while the remains of parapet, buttress, and weatherings which are mostly of the local granite or marble, are bolder and simpler in character, although of the same date.

An association, calling itself the Buckfast Abbey Restoration Committee, obtained the services of Mr. Frederick Walters, a London architect, and in December, 1883, began excavations on the site. These have already brought to light the complete plan of the foundations of



the ancient abbey church; the cloister, chapter-house, fratry, refectory, and kitchen have been clearly determined. The lay-brother's dwellings, which it is said have been found do not appear upon the plan. The church, which is nearly 220 feet long, shows some notable architectural peculiarities. It is remarkable for its excessive length and narrowness, probably arising from the same reason which led to similar proportions in the Assyrian palaces, namely the inability of the builders of stone vaults to cope with great spans. The columns which separated the nave from the aisles, were supported in the foundation by massive continuous walls, instead of isolated piers. The transepts are divided into two unequal parts by solid walls, one of which continues across the chapter-house, and the southern end of this latter forms the eastern enclosing wall of the building. The effect of these transverse walls was to narrow the transepts in the same way as were the aisles. Parallel transverse walls at the end of the church seem to denote most interesting constructive peculiarities in this position. It is to be regretted that the plan gives so little information as to the arrangement of the apses. A massive wall at the western extremity of the south transept probably marks the position of a staircase which once mounted to the dormitories above the cloisters. This monumental ascent must have occupied all of that portion of the south transept which extended beyond the main body of the church. The details of the superstructure, specially the intercolumniations and vaulting, cannot fail to be of historic importance, and it is to be hoped that further information concerning it will be given us later on in the work. The monastic buildings appear to have had three distinct divisions; the *domus conversorum*, so-called by Mr. Walters; the great square cloister, which was 95 feet from wall to wall, and 65 feet within the arches, in which the general rule that cloisters of abbeys were south of the church, while those of cathedrals were at the north of the building, has been carried out; and, grouped upon two sides of this cloister, the chambers of the monastery itself, in such a way that the accommodations of every-day life, kitchen, refectory, and lavatory were isolated from the chapter-house and fratry. The latrines and the chambers in the so-called Abbot's Tower were still farther removed from the dwellings of the friars, being wholly outside of the group. The identification made by Mr. Walters, of the halls in the east of the cloister as the *domus conversorum* is at least questionable, as the comparative size of the halls does not agree with the small chambers for conversation usual in other monasteries of this character, where also they are invariably in more direct communication with the chapter-house. The striking architectural parallels of the Cistercian abbeys of France would lead us to expect a mass of farm buildings on the east of the cloister.

The word "slype," used by Mr. Walters upon the plan to designate one of the chambers, is a stumbling-block, no such technical term[1] being in use; but according to the analogy of Clairvaux, we should suggest that the space so indicated might have been the *domus conversorum*.

Viollet-le-Duc defines the topical arrangement of the cloister in Cistercian abbeys as follows; "An entrance adjoining one of the walls of the nave, with an entrance near one of the transepts; a gallery at the west, next to which lie the buildings of the lay-brothers (*étrangères*), or magazines and cells entered from without; a gallery at the east opening into the sacristy, into the chapter-house, and the ecclesiastical offices; and finally, the gallery opposite to that adjoining the church, communicating with the dormitory and refectory." This general form and arrangement, as well as the other interior architectural features, were mainly determined by synods of the ninth century, the officers of the church having previously lived in dwellings in the town, and the disposition thus adopted was retained with some modifications of detail, until the sixteenth century. Although abbeys had two cloisters according to the conventional form, no trace of the smaller one, that devoted to the more intimate requirements of the abbot, which should be behind the apse, is to be found in the plan, The Cistercians at first adopted as we know, a peculiar style of cloister, heavy, bold, undecorated, giving up delicacy for force, but this character began to be modified by the end of the twelfth century, marking the relaxation in the conventual line.

The fragments of carved stone show, as we have said at the beginning of this article, every successive variety of style in the abbey building from Norman to late Perpendicular. The church and cloisters appear to have been paved with encaustic tiles, the prevailing color being bright yellow, varied by blue and green in the body of the church, and laid in various patterns in the chapel and cloisters. Of course the relics found have been few, for barely the line of the walls is as yet excavated; still some minor discoveries are of interest, a seal of a bull of Pope John XXII, a diamond pane of stained glass with the figure of a pelican, and two mediæval spoons, being among them. Since the return of Mr. Walters to London the work has been going steadily on under the superintendence of the Rev. Adam Hamilton, one of the monastic owners of the site.

Viollet-le-Duc gives a description of the little oratory of St. Jeanles-Bons-Hommes, between Avallon and Savigny in France, built towards the end of the twelfth century, in which the plan, simple as it is, contains all the chief elements which appear in the majestic abbey of Clairvaux, and apparently in other Benedictine monasteries of the same age. In the plan of Buckfast, now recovered, it is interesting to note how the simple form of this little Savigny priory underlies that of the Cistercian abbey which succeeded it. These architectural parallels of St. Jean-les-Bons-Hommes and Clairvaux, enforce the arguments which are to be derived from the historical events related above to prove the Abbey of Buckfast, in the arrangement at present recognizable to be a creation of the twelfth century. It will be seen by these particulars that the importance of such a characteristic and eminently well-arranged monastic plan to architectural history will not be inconsiderable.

It is now intended to rebuild the abbey on its ancient foundations. When it is finished it will stand like its predecessor on the right bank of the Dart River, amidst the picturesque and varied scenery of Devonshire; three-quarters of a mile from the little village of Buckfastleigh, with its one narrow street, and its houses built of the stones of the old abbey. Not far from its towers will be the remains of two encampments supposed to have been left by the Danes; across the moors, the green path still called the Abbot's Way, will mark for the visitor the post-road for the conveyance of wool in the days of the Cistercian Friars; and Dean Prior, not far away, will add its interest to a scene already rich in suggestion and romance, as the birthplace of Herrick, the spot where the greater part of his Hesperides was written, and in whose churchyard he lies buried. M. G. M.

[1] "Slyp" or "slype" is an architectural term, nearly obsolete, however, and denotes a passage between walls.—Eds.

LONDON'S NEW TOWER BRIDGE.

AT last there is a prospect that an old and obstinate grievance of Londoners is about to be in a measure removed. After long waiting, much complaining, the sitting of innumerable committees, the proposal and rejection of innumerable projects, the lower Thames bridge scheme appears to have taken a practical shape, and to be in a fair way of being carried out. Yesterday the Court of Common Council was specially convened to hear the report of their Bridge House Committee on the question. The report was almost identical with the recommendations of the Select Committee of the House of Commons which were issued last July, and it received the unanimous approval of the Court.

The plan now accepted is not, indeed, final, since it only deals with a part of the question: but it is a beginning, and it is more than the proverbial half of the whole. It may be remembered by those of our readers who have followed the long history of this matter that some years ago the Metropolitan Board of Works took up the question, and that their engineer recommended three new crossings; a high-level bridge at the Tower, a tunnel at Shadwell, and a tunnel at Blackwall. The high-level bridge was of course suggested with the view of not interfering with the passage of ships; but its cost would have been enormous. With its approaches and with the two tunnels, the expense would have amounted to more than five millions sterling, a sum which could only be raised by some exceptional measure. The measure proposed was the continuance of the corn and wine dues; but that was refused by the Treasury in a celebrated minute of Mr. Courtney, and consequently the whole plan fell through.

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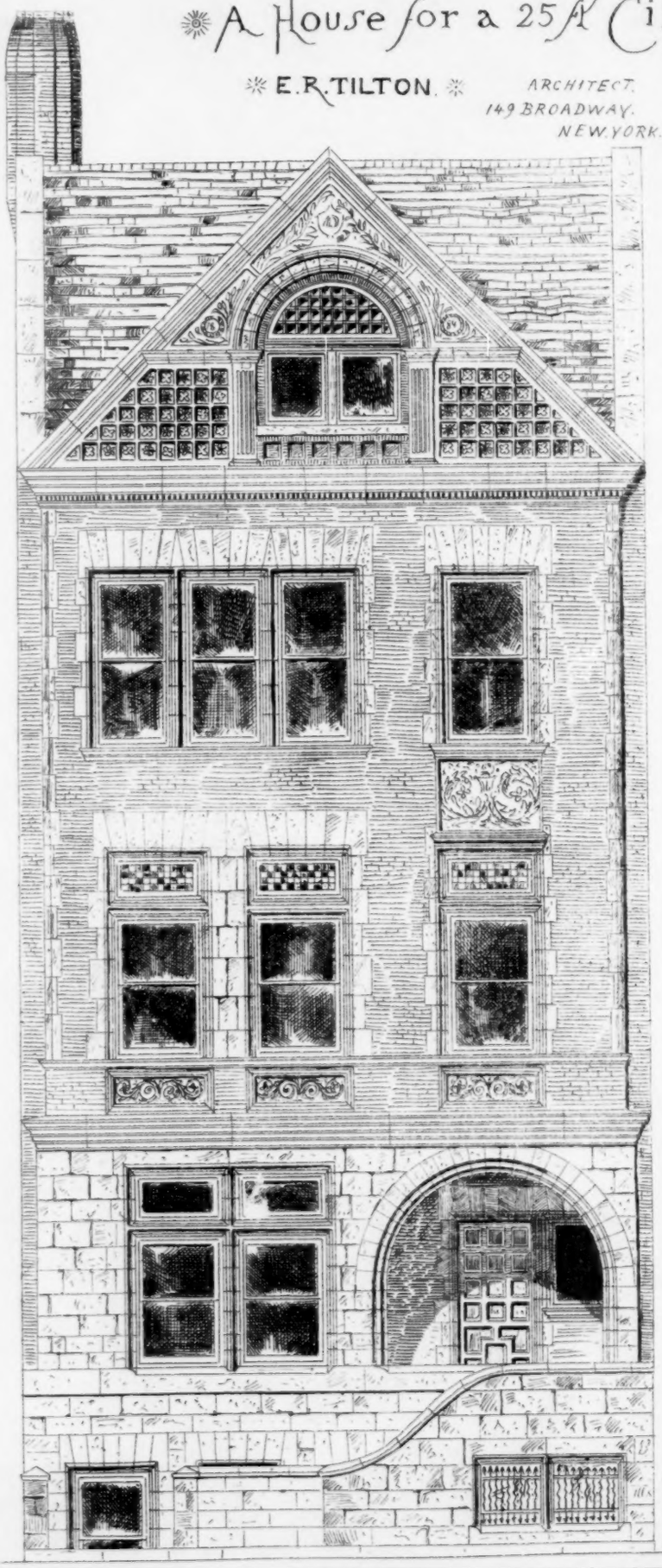
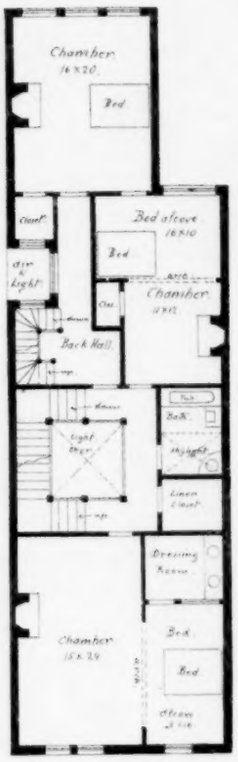
A House for a 25 ft City Lot.

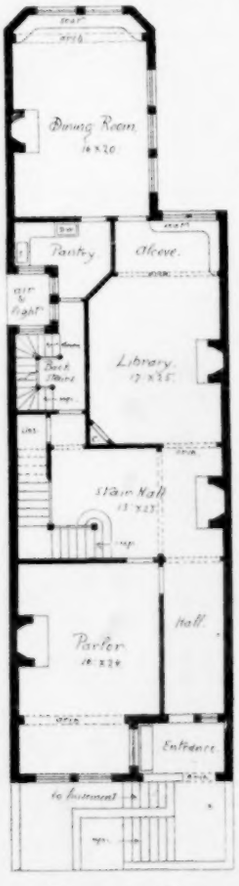
E. R. TILTON. ARCHITECT.
149 BROADWAY.
NEW YORK CITY.



FRONT ELEVATION.



Second Story Plan.



First Story Plan.

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Block of Houses for the Appleton Estate, Albany, N.Y.

Walter Dickson, Architect.

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House at 'Dell-wood'.
Built for Mr. A. Kirby Barnum of St. Paul, Minn.
Cass Gilbert Architect St. Paul
First Floor Plan.
The House at "Dellwood"
Done by Cass Gilbert

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CATHEDRAL, ORVIETO, ITALY.

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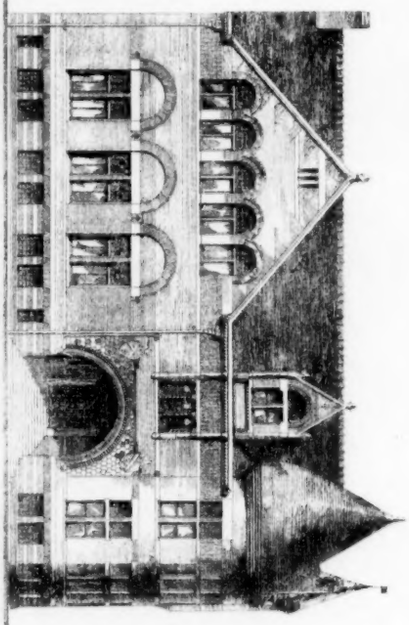

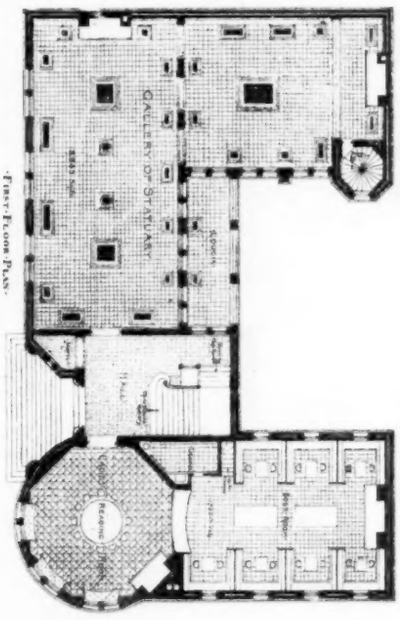

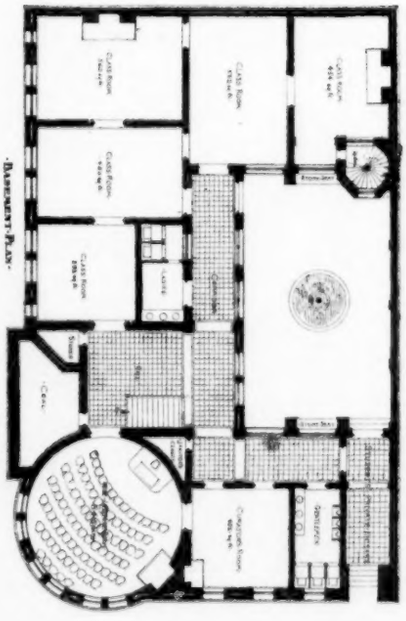

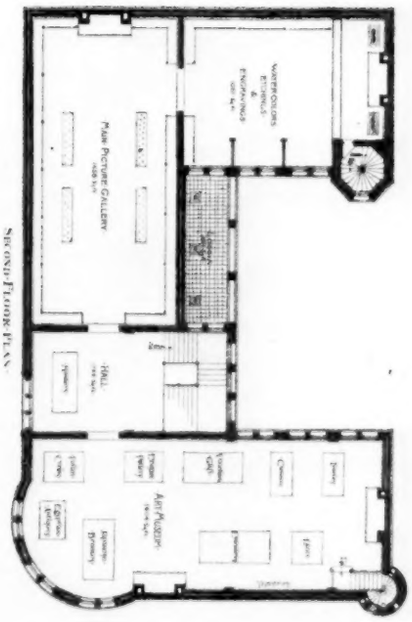

MUSEUM OF FINE ARTS
AND
LADIES' LIBRARY
CHARLESTON S. C.

REILSTAB PRINTING CO BOSTON

Last session two bills were introduced, one promoted by the Board of Works for a subway about a mile below London bridge, and one by a private company for making a "duplex" bridge at the Tower. Both plans were discountenanced by the Select Committee to which they were referred, the one because the subway seemed to be not rightly placed, and the other because the duplex bridge was thought to be in many ways a questionable experiment. The Select Committee then made their own recommendations, which included a low-level bridge, with a swing opening at Little Tower Street, and a tunnel at Shadwell, the tunnel at Blackwall being deferred for the present. The convenience of this low-level bridge is plainly much greater for traffic of all kinds, and its cost much less than that of the high-level bridge would have been, while the interference which it would cause to the shipping on the Thames was thought likely to be small. The committee urged the corporation to take it up, believing the expense would not be greater than the Bridge House Estate could fairly bear. The Shadwell Tunnel was to be the affair of the Board of Works.

It is to be regretted that the Board of Works at their last meeting determined to shelve the question of the tunnel and merely to apply to Parliament for permission to establish "free ferries" at Greenwich and Woolwich. This is avowedly a mere makeshift, and its proposal is not very creditable to the energy of the Board. The corporation, however, is on its mettle. With the fear of Sir William Harcourt before its eyes, it has undertaken to show the inhabitants of London and a hostile Parliament that it can and does work for the public benefit. The proceedings yesterday were singularly harmonious, and ended in the prompt adoption of the Bridge House Committee's report, recommending the immediate construction of a low-level bridge at the Tower. The precise position is from Irongate Stairs, at the bottom of Little Tower Street, which lies to the east of the Tower of London, to the narrow street called Horsleydown. Provision is to be made for the shipping by means, not of a swing opening, but of a "bascule" or lifting section, this being, in the opinion of the experts, the easiest and simplest method of opening the bridge. It is supposed that an average of three minutes will suffice to allow the passing of a vessel; and as the average of vessels has lately been only 14.3 per day, and has never during the past year exceeded 23 per day, it may be supposed that the bridge traffic will never be stopped for more than an aggregate period of an hour during any one day. The length of the bridge will be 880 feet, its width 50 feet, and the height of the centre above high-water mark 29 feet, which is the same as that of London bridge. The gradients will not be steep; on the northern side, on which the bridge will spring from comparatively high ground, being 1 in 70, and that on the southern side, 1 in 40. There will be two piers only in the tideway, and between them there will be a clear space of 200 feet for the passage of vessels, the movable part of the bridge, of course, starting from these piers. The committee do not dwell upon the great size and consequently enormous weight of this movable section, but we may suppose that the engineers see no insuperable difficulty in raising by hydraulic machinery, two divisions each 100 feet long. Lastly comes the question of cost, and here the corporation estimate does not differ from that arrived at by the Parliamentary committee. It is to amount, including the expense of the necessary approaches, to £750,000, and this sum is described as "not beyond the resources of the Bridge House Estate." — *London Times.*

THE ILLUSTRATIONS.

PROPOSED MUSEUM AND SCHOOL OF THE FINE ARTS, CHARLESTON, S. C. MR. WM. MARTIN AIKEN, ARCHITECT, BOSTON.

THE plans show a building enclosing three sides of a court, with fountain and seats, and situated at the intersection of two streets; the main entrance being on the principal street, with a side entrance in the basement for the students and employés. The plan of this floor shows a large room for lectures or general classes, and gives moderate-sized rooms for special classes, which are further supplemented by rooms for the same purposes in the attic. There are also rooms for the curator, janitor, the lavatories, coal and stores; a corridor or cloister paved with tiles and enclosed by casement sashes, gives access to most of these rooms, and the tower in the courtyard contains the janitor's staircase. The main entrance hall, is reached both by a wide stair-way from the basement and by broad steps from the street, flanked by the janitor's office on the left, and the library (which occupies the entire wing) on the right — the book-room of the library is in two stories of eight feet each, lit by windows on either side of each story — the remainder of this floor is devoted to statuary and casts. The loggias on both stories being fitted with glass, act as supplementary galleries to this department. The principal room on the second floor is the picture gallery, lighted by a group of windows high up on the front; the other rooms contain the special and loan collections; the left wing being for water-colors, engravings and etchings; and the right wing being the collection of curios and bric-á-brac in glass cases. The raised floor of the chimney bay in the water-color room, and the stair-cases both here and in the corner of the library wing, and the large fire-places in each room offer points of vantage for the display of numerous collections. The janitor's apartments occupy one wing of the attic, and a series of studios the other. Building stones being a rarity in this section only the steps, water-table, sills and lintels are of this material; brick, in two shades of red, and a limited amount of terra-cotta are used elsewhere. The walls have air-spaces, and the interior construction is intended to be of the open timber or "slow-burning" method, except in the basement where tiled floors with abundant air-space under them are used. The interior wood-work to be of Southern pine, staircases of iron.

THE CATHEDRAL, ORVIETO, ITALY.

WE published, a few weeks since, a view of the cathedral at Siena, and now reproduce a view of the cathedral which is usually associated with it in description, though it is much smaller and more simple in design — except the façade, which is covered with sculptures and paintings. As thirty-three architects have been employed upon it, it is difficult to say to whom the merit of the work properly falls, but the corner-stone was laid in 1290 for the erection of the building in accordance with the design of L. Maitani, who had just finished his work upon the cathedral at Siena. The building is 278 feet long, 103 feet wide, and 115 feet to the ceiling, which was built in 1828.

FOUR HOUSES FOR THE APPLETON ESTATE, WASHINGTON AVE., ALBANY, N. Y. MR. WALTER DICKSON, ARCHITECT, ALBANY, N. Y.

HOUSE FOR A. KIRBY BARNUM, ESQ., DELLWOOD, NEAR ST. PAUL, MINN. MR. CASS GILBERT, ARCHITECT, ST. PAUL, MINN.

HOUSE FOR A TWENTY-FIVE-FOOT LOT. MR. E. R. TILTON, ARCHITECT, NEW YORK, N. Y.

ELECTRICAL PROGRESS IN AMERICA.

AT the last meeting of the Society of Telegraph Engineers and Electricians, Mr. W. H. Preece, F. R. S., gave a most interesting discourse on the present condition and future prospects of electrical engineering in America. The author visited America in 1877 in order to inspect the telegraph systems there, on behalf of the Postal Telegraph Department; and his second visit was paid during the recent meeting of the British Association at Montreal and the holding of the Electrical Congress at the Philadelphia Exhibition.

After reviewing the work done at both of these scientific gatherings, Mr. Preece went on to speak of the general progress of telegraphic industry in the United States, remarking that since 1877 we in England had advanced more rapidly than our cousins, a remark which is contrary to the received opinion. It is to be taken, however, in a scientific rather than a material sense, for as Mr. Preece states, the mileage of telegraph wire has increased from 200,000 in 1877 to 433,726 in 1884, while the number of messages per annum has increased from 28 millions, to 48 millions, in the same space of time. The number of offices has risen from 11,660 to 13,600, and the capital invested from 40 millions to 80 millions of dollars. One telegraph novelty had indeed appeared, namely, the Delany multiplex system. Mr. Preece speaks very favorably of this rapid telegraph, and hopes to try it on the Postal Telegraph lines. The apparatus itself will, we understand, be exhibited at the forthcoming International Inventions Exhibition in South Kensington,

Passing from telegraphic to telephonic operations, Mr. Preece alluded to the recent attempt to upset the Bell patents on the ground of Drawbaugh's claim to priority of invention; an attempt which has for the present failed, pending an appeal to the Supreme Court. Judge Wallace has decided that notwithstanding the testimony of some two hundred witnesses who claim to have heard of, heard, or seen the Drawbaugh telephones prior to the date of Bell's patents, the evidence leads to the conclusion that Drawbaugh had not invented a practical telephone prior to that date. The case has extended over four years, and the interests involved are at present valued at 100 million dollars. The decision will, if unreversed, give an impetus to telephony in America by preventing threatened litigation. From 150, the stock of the Bell Company has risen to 250 in less than six months, owing to the termination of the case in the Circuit Court.

The telephone in America (to return to Mr. Preece's lecture) is used on a far more extensive scale than in this country, notwithstanding the fact that it is far more heavily taxed than here, one company being taxed as much as 75 per cent of its receipts. The reason of this is that it is a vital necessity to business, partly owing to the excessive heat during summer. The charges for the use of the telephone are also much higher in America than here, the annual charge for the "law" exchange system employed by lawyers being £44, while the ordinary charge is £35, as against £20 in London. In some American towns, however — for example, Philadelphia — the rate is £25, and in Buffalo they charge by results at a tariff of 6, 5 and 4 cents per call according as the minimum number of calls is 500, 1000, and over 1000 per annum.

The exchange system is very promptly worked in America, the maximum time of "putting through" being four seconds on the

Milwaukee lines. There are 10,600 subscribers to the exchanges of New York alone, whereas in all England there are only 11,000. In the whole United States there are 97,400 circuits, comprising 90,000 miles of wire, and some 517,000 instruments have been manufactured.

Turning to electric lighting, Mr. Preece remarked upon the extraordinary progress it has made in the United States as compared with Great Britain. There are some 90,000 arc-lamps alight every night in the States, and in most of the large cities the streets and warehouses are brilliantly lighted by them. The contrast between New York and London in this respect was, as Mr. Preece stated in a recent lecture to the Society of Arts, most depressing. "On the evening of October 21st," he said, "I drove from the Windsor Hotel, New York, to the Cunard Wharf, a distance of about four miles, through streets entirely lighted by electricity. On October 30th I drove from Euston to Waterloo without seeing a single electric light." One manufacturer told him that he was turning out 800,000 carbons for arc-lamps per month, and another that his output was 50 arc-lamps and 3 dynamos per diem. There are many central stations working regularly, both with arc and incandescent lamps, and more than one electric-light company pays dividends; while the manufacturers seem to be full of work.

The principal systems in use are, for arc, the Brush, Weston and Thomson-Houston; but there are other systems not so well known on this side of the Atlantic, such as the Hochhausen, the Van de Poel, the Western Electric, the Fuller, and the Sperry. The chief incandescence lamps employed are the Edison and the Weston.

In his lecture to the Society of Arts, Mr. Preece entered rather more fully into this part of the subject than at the Society of Telegraph Engineers, and we will therefore refer to some of his observations at the former place.

The Weston system struck him as probably the best in the United States from a mechanical point of view. The great suspension bridge at Brooklyn is lighted by it, forming a very splendid spectacle on a fine night. New York harbor will also soon be lighted. The dynamo is remarkably free from sparking, the "Foucault" currents are checked, the resistance of the armature (.0011 ohm.) is so low as to be negligible, and the dynamo becomes practically self-regulating; while the electromotive force is a safe one, being only 70 volts when the machine is running at 1,000 revolutions per minute.

We need not follow Mr. Preece in his accounts of the various systems above mentioned, as they will be found described in detail in our pages; but we may mention that it is at length decided to light the streets of Ottawa with the Thomson-Houston system by power derived from the celebrated Chaudière Falls. The Thomson-Houston Company have already a central station at Montreal, supplying 164 arc-lamps to the streets of the town at the rate of 50 cents per lamp per night, the lamps being lighted from dark till midnight. Here, as in the case of the Brush central stations, the current is carried by overhead wires erected on posts, the wires being of copper (No. 6 gauge) covered with asbestos and cotton. In Philadelphia Mr. Preece inspected a Brush central station supplying nearly 1,000 lamps and utilizing 1200 horse-power. There were 25 circuits, some four miles long, of overhead wires. The charge for each lamp is $25 per month, which is equivalent to £60 per lamp per annum.

For street lighting the lamps are suspended from tall posts running in a zigzag line and about 50 yards apart. An experiment in general illumination by eight Brush lamps on four iron masts 250 feet high, which Mr. Preece saw at Cleveland, did not recommend itself to him, the streets below being lit by what seemed a very pale moonlight. We may add that the price paid in New York is 70 cents per night, or £50 per annum for each arc-lamp; but a fine of $1.40 is imposed on the lighting company every time a lamp is reported to have been out. This serves as a salutary check on the working of the system.

Incandescence lamps are not used in America for street lighting, and for indoor lighting they have not been employed to the same extent as in England, although they have several central stations there.

The Edison and the "tamadine" lamp of Weston are the most promising lamps on this system; but the Swan and the Bernstein lamps are also used. The largest central station is that of the Edison Company in New York; but Mr. Preece saw a very interesting little station at Roselle, a small village in New Jersey, where three dynamos, in series, supply 1,200lamps in three series by means of overhead wires. The charge was a cent per hour for each 10-candle lamp, a price equivalent to gas at $2.50 per 1,000 cubic feet.

Aerial wires are in general use in the States, except in connection with the Edison system. They are in general of copper covered with hemp or cotton, and supported on poles erected along the curb-stones. High-tension currents are also in frequent use, and the immunity from accident is therefore surprising. Fires are, however, not so rare, and the currents often leak into the telephone wires. In fact it is becoming the practice to put safety cut-outs in the latter to protect the instruments from leakage currents. Secondary batteries have not received so much attention in America as in England; but the Planté and Brush cells are both in use to a limited extent.

Ship-lighting is becoming very common in America, many of the Hudson River and Lake Superior steamers being lighted by electricity. So also are the ferry-boats of the Pennsylvania Railway. In short, Mr. Preece considers that electric lighting, as a practical problem, has been thoroughly solved in the United States, and that both here and there it will gradually become cheaper. Its peculiar advantages will lead to its general introduction, and one of these, which has been observed in America, is the prevention of crime. The chief of the New York police has even said, "every electric light erected means a policeman removed." No doubt there is some truth in the remark. — *Engineering.*

A TENANT'S LIABILITIES.

COMPETITION FOR EQUESTRIAN STATUES FOR BLACKFRIARS BRIDGE, LONDON. DESIGN BY G. G. ADAMS. SCULPTOR.

AT this season of the year, when so many houses change hands, it may be useful to draw attention to the liabilities incurred by tenants. The following definition of dilapidations is pretty clear, and might lead to a more amicable agreement between landlord and lessee if known. "Dilapidations are those defects only which have arisen from neglect or misuse, and not to such as only indicate age, so long as the efficiency of the part remains. But if the effects of time or age have proceeded so far as to destroy the part, or its efficiency in the structure, this argues neglect or misuse; it being the presumption that, at the commencement of his term, the tenant was satisfied that every part was sufficiently strong to last to its close." Under the ordinary covenants a lessee is liable for the efficiency of every part of the premises, even those parts erected during the term. If the parts can be repaired, they may be so treated; but if the decay or injury has gone so far as to render repairs insufficient to restore the usefulness of the part, it must be made good. Thus, among the items the tenant is called upon to make good is that of roofing; such as to replace all loose and broken tiles, to strip and retile where the laths are broken, or where the rafters, feet or purlins are decayed; to restore all defective filleting and pointing. Defective brickwork in walls, chimney-shafts, parapets and gables; portions out of the perpendicular, or bulged or cracked, have to be made good, besides repointing where necessary, and refixing broken chimney-pots. Slated roofs also come under the same general clauses. Repairs to woodwork include such items as the following: making good to all loose or decayed timbers, whether injured by wet or dry-rot; to fix timbers where not straight, through neglect or decay; to secure and make good all loose, broken or decayed weather-boarding, frames, skylights, wooden gutters, dormer boarding, and other external work; also to make good broken or decayed wooden fences, door-frames, etc.; to secure and make good all loose, broken or rotten floors; to fix up and relay where not level, occasioned by neglect, and to rehang where required all doors and shutters; replace broken lines, repair sashes, nosings to stairs where defective, and treads. Questions are continually arising regarding the liability of the tenants to repair joiner's work, but it appears clear that the burden of repairs falls upon the tenant. With respect to mason's work, all defective stonework, of whatever description, falls upon him. Thus, broken cornices, lintels and sills have to be made good by filling-in pieces; also broken steps and landings, both inside and out. In case of broken nosings, or of treads so worn down as to become dangerous, "the piecing is to extend to cutting out the upper surface and filling in the depth of nosing with a slab of sufficient thickness to form a new nosing. Broken chimney-pieces, slabs and inner hearths to be made good or be relaid; and loose and sunken pavings to be taken up and relaid. All panes of glass having two cracks in them to be reinstated, and also the making good of all putty work. With respect of painting, it is usual for the tenant to repaint all wood and iron work for their preservation, and where defaced, also on stone, stucco, or other external work. Inside painting is exempted, except in cases of misuse. To other trades the same rules apply; all broken fittings, fixtures, and parts of buildings to be repaired or made good by the tenant. The term "to make good" implies a renewal of the part, and ought not to be confused with the general words "to repair." — *The Building News.*

New York's Tenement-Houses. — Inspector Frederick N. Owen, who has spent three months in examining the tenement-houses of this city, made his report to the tenement-house commission lately. He found the following percentage of sanitary conditions: —

	Building.	Plumbing.	Tenants.
Good	35.47	2.08	36.87
Fair	46.78	58.83	54.26
Bad	17.73	39.37	9.16

This shows that the tenants, as a class, are slightly in advance of the buildings they occupy, and upsets the theory that the tenants make the buildings shabby. In point of cleanliness, the inspector places the Germans first, and the French, English, Irish, Polish Jews and Italians in the order named.

ARCHITECTURE AT CINCINNATI.

Panel in the Monmouth Battle Monument: N. J. Subject: Molly Pitcher —— designed by J. E. Kelly. NY

THE year 1884 has stepped back into the past in a decent and orderly manner, and has left us its history to contemplate, and from its long architectural procession as it marches by us in memory we gather bits and fragments that shall be unto us a lasting benefit in the years to come; and it is well to stop at these yearly mile-stones to contemplate the progress made, the work accomplished, the good done; and while we look on with feelings akin to satisfaction and contentment; yet nothing has been erected that might not have been better, for whenever the time comes that architectural perfection is reached it will then be time to close up the architectural world, and pass judgment on the quick and the dead.

In a jaunt about the city, with feelings somewhat as expressed, one will come first and foremost to the Government Building on Fifth Street, from Walnut to Main, occupying half a block. Like the poor, this building is always with us, and like the poor, also, it furnishes items of interest. We find that the building is actually and finally enclosed, that the finished floors are being laid, that some of the inside finish is being manufactured and put in place, that the glass ($23,000 worth) has been contracted for, that the plastering for the most part has been, or is being done, and altogether that in the course of human events it will certainly be finished. The slow progress that this building has made, may be accounted for somewhat by the fact that during the summer months when work might be done, the appropriations have been exhausted, and during the winter months, when they have the appropriations, everything is frozen up, and they can't work. This building is now, and ever has been (since it started some twelve years ago) in charge of Mr. Samuel Hannaford as Superintendent.

Leaving the Government Building for another year, we go down Walnut to Fourth Street, and behold the highest building that has yet been erected in the city; it is 66 feet front, *ten stories high*, and was designed for the Emerys, by Mr. Hannaford; its height is perhaps its chief [illegible], and after looking at it for awhile, one will say, "Well, that's not bad," and pass on westwardly on Fourth Street, half a block to another street-front by Mr. Hannaford, for Messrs. John Church & Co., which is about 60 feet front, and only five stories high, and therefore only half as interesting as the Emery Block. Both these buildings are faced with Ohio freestone, of which this city is chiefly built. Farther down Fourth Street, corner of Elm, Mr. Hannaford is erecting for Mr. W. H. Derby, a store and office-building, but as it is only up to the street-line, you can contemplate nothing but its futurity, as represented by piles of brick, lumber, stone, etc. Here, however, the architect has a larger lot (and a corner one at that), and we shall look for greater things from him, because of greater opportunities.

The year will perhaps be easily remembered architecturally, on account of the Court-House and the Art Museum, both in charge of Mr. James W. McLaughlin, Architect. The Court-House was destroyed by riot and fire last March, and we find that the old walls (except the outside ones on the north, south, and east), have been torn down and the débris cleared away, and that work of rebuilding has already been commenced; that the drawings have all been finished in an incredibly short space of time, and contracts for the enclosing of the building have all been advertised for, and let according to the law in such cases made and provided. It is seldom, indeed, that a job of this magnitude has progressed so rapidly, smoothly, and satisfactorily. The front of the new building (and it really has only one front), has been designed by Mr. McLaughlin, more in the Norman or Romanesque than anything else, and will be entirely different from the old one, which was strictly Corinthian, even if the modillions of the cornice were of cast-iron, painted like stone; but for that matter the entire building, stone and all, had the year before all been nicely and newly painted white.

The Art Museum, located on one of the hills in Eden Park, presents a solid and sedate appearance: it is built of local blue limestone, and trimmed with red granite; the walls seem to be all finished ready for the roof. This building has also progressed rapidly and well.

Messrs. Mabley & Carew are to build corner of Fifth and Vine Streets, a new store 66 feet on Fifth, and 90 feet on Vine Street, five stories high, freestone fronts, tower on the corner, Edwin Anderson, architect; cost not stated. Other than the foregoing, we hear of nothing in the way of large improvements, but there seems to be plenty of the smaller kind.

Having mentioned the principal buildings, it is too much of a task to enter the smaller ones, except to mention, *en passant*, that at least six new churches are now underway, and most of them have been designed by Mr. A. C. Nash.

Leaving the past and looking unto the future, we find a promise of interest in the competition for the new Chamber of Commerce Building, which is to be erected at the corner of Fourth and Vine Streets. The lot is 100′ x 150′, and is certainly a fine one, although not quite large enough, the money ($500,000) is ample, and the selected architects the best the country affords; and they are to be paid $500 each, whether or no their designs are accepted, and the successful one of course gets the usual commission. Besides the six invited, the field is open to all, only they don't get paid unless their pole is long enough to knock the persimmon. Whether this programme will be carried out or not remains to be seen, but we hope it will be, as it will afford us the only genuine competition ever had in this city. One peculiar feature of the competition is that, although the designs of one of the six invited architects may be placed as "most meritorious," yet the committee do not bind themselves to employ him as their architect, even to prepare the plans, but will pay $2,000 to him, and have the right to employ an architect of their own choosing to perfect the plans.

Of the total amount of building done last year it is as usual hard to estimate, as we have no reliable records kept; since a permit is only taken out when the street is to be occupied, and then the cost can be put at almost any figure. But the records from year to year, however, just as they appear on the books of the Board of Public Works, form a very good basis of comparison; and so we give the figures for what they are worth, with the advice to multiply by two in each case.

Year.	Permits.	Cost.
1880	636	$1,521,700
1881	569	1,832,600
1882	660	1,952,300
1883	773	2,670,900
1884	747	2,958,000

C. C.

THE OWNERSHIP OF DRAWINGS.

MACON, GA., January 6, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — The question of ownership of designs, plans and specifications is one constantly arising in our practice. In your last issue appears a copy of the schedule for professional service adopted by the American Institute of Architects, and they declare that "Drawings and specifications as instruments of service are the property of the architect." Our clients and the public demur, and say the above is a rule of the Institute, and not *law*. If this question has been decided by the courts, will you kindly inform your readers where the decisions can be found?

I am, very truly, ARCHITECT.

[THE precedent on this point is the famous case of the British Government against the heirs of Sir Charles Barry, to recover the plans of the Parliament Houses at Westminster. This was decided in favor of the Government, although, as architects throughout the world claim, unjustly, and in violation of the understanding implied in the contract between Sir Charles and the Government. However, as courts are likely to follow this decision, the only way to make sure of retaining property in the plans is to have an express understanding with the client beforehand. — EDS. AMERICAN ARCHITECT.]

THE ECCLESIASTICAL BONFIRE.

BOSTON, January 10, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs,—The interesting design of a proposed church in Paterson, N. J., again suggests the question: Will it constitute another example of a stone screen protecting an inside timber church, so constructed as to assure a total loss from the smallest fire in the cellar?

In the practice of combustible architecture great progress seems to have been made. The rate of destruction of churches is now nearly *two* per week, a gain of one per week in seven years. Hospitals, asylums and almshouses are now being destroyed at the rate of one every two weeks, against one per month a little while ago.

Could you not give some inside plans and specifications for incombustible churches?

Yours truly, E. A.

POSTAGE RATES ON DRAWINGS.

CLEVELAND, O., January 12, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs,— I received a letter from the First Assistant Postmaster-General, containing the following, which may be of interest to some of your readers, as I think there is still a misunderstanding in regard to the law on first and fourth class matter, and the distinction between various classes of architectural plans: —

"Drawings, plans and designs, when *entirely* in *print*, are only subject to third-class rates of postage. Such printed plans or drawings, when they contain additional matter supplied by hand, as the addition of lines, figures or words, become subject to letter-rates of postage. Photographs have been held to be subject to fourth-class rates of postage. Blue-prints are classed with photographs."

Yours truly, GEORGE F. HAMMOND.

NOTES AND CLIPPINGS.

Death of an Architectural Painter. — The sudden death is announced at Brussels, on December 7, of M. Jean-Baptiste van Moers, the well-known architectural painter. He was but fifty-eight years of age, and fell dead while working at his easel, palette and brushes in hand. His views of old Brussels that decorate the Salle d' Attente, in the Hôtel de Ville, were painted before the boulevards, etc., had improved away portions of the picturesque lower town. His latest work, in which he is said to have surpassed himself, was the decoration, with views of Venice, of a dining-room for his friend, the animal painter, M. De Haas.—*Academy, December* 20, 1884.

History of Greenough's Washington. — For the past forty years and more, people have laughed at the cold air and naked form of George Washington, as he sits in marble at the east front of the Capitol. He has been the butt of all the jokes of senators, representatives, strangers and guides, for the past four decades, and even solemn Allen G. Thurman has aided in the ridicule. Still this statue has a longer history than any other at the Capitol. It was ordered by Congress at the end of Andrew Jackson's first term, and it took eight years for Horatio Greenough to make it. He did the work in Florence, Italy, and he made the statue in a sitting posture instead of pedestrian, as the Act of Congress demanded. It was designed, you know, to stand in the centre of the rotunda inside the Capitol. Well, when it was completed, in 1840, the next question was how to get it from Italy to America. Congress haggled over it for some time, and finally sent a man-of-war to bring it from Genoa to Washington. In the meanwhile Mr. Greenough had started it on to Genoa. It weighed twelve tons, and it took twenty-two yoke of oxen to haul it. As it went on its way through Italy, it is said that the peasants thought it the image of some saint, and that here and there they knelt and crossed their breasts as it went by. When it got to Genoa it was found that it was so large that it could not be gotten through the hatchway of the man-of-war which was to carry it to Washington, and a merchant vessel had to be chartered. At last it arrived at the Washington Navy-Yard, and Congress was horrified to see that their pedestrian statue was sitting in a chair, and that it was nude to the waist. Henry A. Wise then said: "The man does not live, and never did live, who saw Washington without his shirt," and the country applauded the sentiment. But the navy-yard is not the Capitol, and it cost five thousand dollars to bring the statue from it to the rotunda. When it was gotten to the Capitol doors it was found that the statue, like the painting of the Vicar of Wakefield's family, was too large to go through. The masonry had to be cut away and the door enlarged. When it was finally put in, it is said the floor began to sink and a pedestal had to be built under it to support it. It was soon found, however, that the rotunda was no place for it, and finally, after a number of removals, it was taken to where it now stands in the bitter cold, bleak air of the Capitol plateau, where the winds can howl out Washington's agony as they go tearing by, and where his nakedness has "the boundless arch of the sky" for a canopy. Originally the statue was to have cost $5,000. It has already cost $44,000, and this sum is considerably increased at every removal. — *Washington Correspondence of the Cleveland (O.) Leader.*

The Excavation of the Roman Forum.—A correspondent of the *London Times*, writing from Rome, says: "The *France* informs the Parisian public that the pope has conferred upon the new Cardinal Ganglbaur, Archbishop of Vienna, the title of Santa Maria Liberatrice, in order to prevent that church, which stands between the Palace of Caligula and the Forum, from being thrown down in the course of the excavations; and the *Diritto*, remarking on the above, indignantly expresses its surprise at the Archæological Commission and the Ministry of Public Instruction, for showing so much homage to the Vatican as to permit that obstacle to the completion of the excavation of the Forum to remain standing, especially as it is devoid of the slightest architectural or artistic merit. The *France* deserves thanks for having aroused the Roman press to urge the demolition of the church of Santa Maria Liberatrice. Being, as it is, an obstacle to the progress of the excavations, and possessing neither a living congregration nor any past historical associations, it certainly ought not to be permitted to stand, in homage either to the Vatican or anything else. But it is untrue that the pope has sought to preserve the church by giving it to Cardinal Ganglbaur, for two sufficient reasons: first, that it is not and never has been on the list of the titular churches; and secondly, because a cardinal's title is only conferred upon him at the time when the pope, in public consistory, places the traditional red hat on his head. For that Cardinal Ganglbaur must come to Rome, and as he may not do so for months, the question which of the vacant churches shall be conferred upon him will only then, as usual, be taken into consideration. It is not the pope, but those estimable and wealthy ladies, Oblates, who have succeeded the vestal virgins as owners of the property at that corner of the Palatine, who stand in the way of the excavations. They have no objection to sell the church; but the price they ask for it is enormous, and although they have come down somewhat in their pretensions, the lowest sum they have yet named is half a million. In the meantime the works are to be continued by the demolition of the modern granaries, built among and against and almost hiding those magnificent, lofty walls behind the church of Santa Maria Liberatrice, belonging to a grand edifice at the base of the Palatine, regarding which nothing whatever is known, though many different names have been given to it. The clearance at this point will solve a most interesting problem, and doubtless have very important results. As the opening of the new Via Cavour continues towards the Forum, the modern houses between the Curia and the temple of Antoninus and Faustina, which still cover the remains of the Basilica Emilia and other edifices on that side of the Forum, will be removed and the excavations there carried to completion. Some little time, however, must elapse before this can be done, and altogether the actual condition of Italian finances, and the greatly increased burdens which the cholera and other disasters have brought upon the country, leave little hope of much progress being made in antiquarian research this winter"

Seville Cathedral's History.—A correspondent of the Cincinnati *Enquirer* says: There is something singularly attractive about all these old cathedrals — in their age, their history and constant use throughout, whatever change of dynasty or form of religion the place containing it must undergo. Perhaps this change has been exemplified nowhere else more markedly than at Seville, for Seville has rung the changes in forms of government and difference of rule almost as much as Rome. Seville was an old city in the times of Strabo, Pliny and Ptolemy, and the discussion, active then, still continues as to whether Seville was founded by Hercules or Bacchus, or in epochs less mythologic, by the Chaldeans, Phœnicians or the Jews. Up to the year 711, Seville was under the Gothic rule. Then it was that the Moors seized it, and the Sultan of Cordova put over it a governor of his own. In 1144 the Sevillians became so proud as to wish for a king of their own, and the simple mode of making a monarchy of Seville was to put a crown upon the head of their own Viceroy. But the Sultan of Cordova did not take kindly to this deed, so he sent down an army to recapture Seville, whereby he lost his own crown, and Seville took possession of Cordova. In 1236, Ferdinand II, king of Castile and Leon, seized Cordova for himself, and Seville now declared herself a republic. Twelve years later Ferdinand II seized Seville for himself, and incorporated it in the rapidly-growing kingdom of Castile. Thus has Seville become in the space of five hundred years a colony of Rome, a dominion of the Goths, a ka ifate of the Sultan of Cordova, an independent capital of the Moors, a republic, and a subject of the kingdom of Castile. On the same spot of ground now occupied by the ancient cathedral of Seville, worship has been offered up through all this time, each religion, though thoroughly despising, never ceasing to use the temples of its predecessors. A Jewish synagogue, a temple of Venus, a temple of Jupiter, a Mohammedan mosque, and a Catholic cathedral have all occupied this ground, each after its proper purification from the foul contamination of the rest. So to the stranger, of whatever faith, or of no faith at all, this cathedral of Seville stands on hallowed ground. All around it in rows are old columns of stone, partly sound, in places broken off irregularly above, relics of forgotten structures, else all effaced. And as we look upon the crumbling walls of the present temple itself, the thought will not be suppressed: What will be the new religion to succeed all this? Will it be the faith of the great reformer, which has spread like the flash of fire over so many of the lands of highest civilization, or will it be the faith of the reason which believes nothing not demonstrable to the senses, and which is gradually undermining all faith in the great intellectual centres of the earth? Will this old cathedral, consecrated to the worship of the one God, built upon the ground where once was a temple to the glorification of many gods, will it give way in its time to halls of science, wherein will be expounded the laws of simple Nature, which Jews, Goths and Moors, as well as Christians, must like obey? *Quien sabe?* But not in our day; certainly not here. Certainly not here in Spain, last of all.

The Proposed Saharan Sea.—With reference to the daring French project for flooding the desert of Sahara with what would be virtually a new sea, it may be well to recall the opinion expressed by M. Elisée Réclus that at one period in the world's history the desert was covered by a sea very similar to the Mediterranean, and that this sea exercised a very great influence upon the temperature of France, as comparatively cold, or at any rate cool winds blew over it, while now the winds which prevail in the great expanse are of a much higher temperature, and are, in fact, sometimes suffocatingly hot. The appearance of the desert seems to support the theory of M. Elisée Réclus, that it was at one time the bed of a sea of considerable extent, of which the great inland African lakes recently discovered are possibly the remains. The present vast extent and configuration of the African continent would also appear to support the conclusion that at one time it comprised a less area of land than it does at present. The serious question which arises, assuming that the theory of M Elisée Réclus is substantially correct, is, what will be the effect of the creation of a second African sea in the room of that which has disappeared? Would the temperature of France, and possibly even of England, be again reduced? It is a geological theory that, in the glacial period of the world's history, Great Britain was covered with ice and snow, very much as Greenland is at present. Some great influence must clearly have been brought to bear upon France and Great Britain, which rolled the ice over so many hundred miles northward. What was this influence? Was it the large African sea which French enterprise is endeavoring to recreate? If it were, we should say that whatever the French may gain in Africa by the realization of a Saharan sea would be much more than counterbalanced by what they would lose in France itself.—*Engineering.*

The "Urbanizing" of England. — Apart from the political effects, to which it is not our province to refer, of the new electoral division of the country, it may be regarded as a step toward what may be called the urbanizing of England. The rapidly-increasing pressure of population on area must, if continued long enough, in time convert a populous island into a group of towns. But the rate of agglomeration varies very much. Towns with fewer than 10,000 inhabitants, as a rule, are now hardly increasing in population; some of them are actually decreasing, as are some rural districts. As a general rule the outer ring of the metropolis, and the towns of between 100,000 and 200,000 inhabitants, are most rapidly increasing. Most marked of all is the increase of certain seaport and waterside towns. In twenty-five towns classed as seaports, the increase of houses from 1871 to 1881 was 16.6 per cent; in Great Grimsby it was 71 per cent; and in Barrow-in-Furness 148 per cent in the decade. This determination of the population toward certain centres of activity is a matter of primary importance as regards the building industry of the country, with a general increment which would double the population enumerated in 1881 by the year 1936. The actual rate of urban increase in the number of inhabited houses was 15.6 per cent in ten years, against a rural increase of 11.0 per cent, and in the sixteen towns with populations between 100,000 and 200,000 each, which contain in all 408,000 houses, the increase in the decade has been on the average 21 5 per cent. The town builders are thus those whose activity is most apparent.—*London Builder.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

309,998. BENCH-HOOK. — Charles M. Van Vleck, Uhrichsville, O.

310,014. FIRE-ESCAPE. — Chas. B. Anderson, Maysville, Ky.

310,033. ADJUSTABLE BUTT-HINGE.— Robert G. S. Collamore, Boston, Mass.

310,046. SPIRIT-LEVEL.—Albert D.Goodell, Miller's Falls, Mass.

310,048. SPIRIT-LEVEL. — William Grams, Sturgis, Dak.

310,076. HINGE FOR AWNING-BLINDS.— Patrick K. O'Lally, Boston, Mass.

310,079. VENTILATION OF SOIL AND WASTE PIPES. —Papheo D. Pine, Worcester, Mass.

310,084. LOCK. — George W. Roberts, Walla Walla, Wash.

310,087. FIRE-ESCAPE.—Clark R. Shelton, New Haven, Conn.

310,088. BRICK.— Arthur Sherry, Learned Station, Miss.

310,100. JACK-SCREW.—Walter W. Vaughn, Stockton, Cal.

310,116. HOT-AIR REGISTER. — John F. Beale, Washington, D. C.

310,154. SPIRIT-LEVEL. — Benjamin F. Tyler, Salem, N. J.

310,156. SMOKE-CONSUMER. — William Vogel, Chicago, Ill.

310,157. FILTER. — Andrew von Weisenflue, Scranton, Pa.

310,163. PLANE.—William F. Achenbach, Reading, Pa.

310,179. DOOR-CLOSER. — Edward H. Brown, New York, N. Y.

310,183. ELEVATOR. — Philip F. Corbett, Boston, Mass.

310,192. FIBROUS-PULP ROOFING-TILE.— Julius T. Edson, Cleveland, O.

310,205. FABRIC FOR COVERING HEATED SURFACES.—Henry W. Johns, New York, N. Y.

310,212. AIR-REFRIGERATING APPARATUS.—Chas. P. Marshall, Memphis, Tenn.

310,218. LADDER. — Joseph D. Norton and Leonard M. Norton, West Hampton, Mass.

310,220. SASH-HOLDER. — Chas. A. Paul, Mill Centre, Wis.

310,229. DOOR-HANGER. — Obadiah Seeley, Syracuse, N. Y.

310,232. LUMBER-STACKER. — William T. Smith, Bozeman, Ala.

310,242. BURGLAR-ALARM. — James G. Batterson, Hartford, Conn.

310,277. OPEN FIRE-PLACE.—Isaac Hayes, Philadelphia, Pa.

310,292. CALIPERS. — Frank G. Lilja, Springfield, Mass.

310,298. SEWER-CONNECTION FOR WATER-CLOSETS.—Samuel G. MacFarland, New York, N. Y.

310,300. PIPE-COUPLING. — William R. Middleton, Cleveland, O.

310,312. WINDOW-SCREEN. — Josiah K. Proctor, Philadelphia, Pa.

310,320. SPRING-LOCK FOR HATCHWAYS.—William J. Ritchey, Pittsburg, Pa.

310,341. WELL-CURB.—Miciah Walker, Port Huron, Mich.

310,344. BATH-TUB. — Alexander M. Waterworth, Baltimore, Md.

310,349. CHAMFERING-PLANE.—Richard V. Wicks, Brooklyn, N. Y.

310,352. TRANSOM-LIFTER. — John F. Wollensak, Chicago, Ill.

310,355. WINDOW. — Robert Adams, 17 Blackman Street Borough, County of Surrey, England.

310,364. WEATHER-STRIP. — Charles A. Binkly, Troy, O.

310,372. SHUTTER-WORKER. — Robert I. Brown, New York, N. Y.

310,375. STEAM-RADIATOR. — William G. Cannon, London Road, Southwark, County of Surrey, Eng.

310,377. MOULD AND MOULD-HOISTING APPARATUS FOR BUILDING CONCRETE WALLS.—Thomas W. Carrico, San Antonio, Tex.

310,381. MARQUETRY. — Amand J. B. A. Chatain, New York, N. Y.

310,391. CHIMNEY-CAP.— Henry S. Dickinson, Jersey City, N. J.

310,401. WATER-CLOSET SEAT.—Melchor Fox, Eau Claire, Wis.

310,404. FIRE-EXTINGUISHING COMPOUND.—Ferdinand Frolich, New York, N. Y.

310,406. WEATHER-STRIP. — Stephen J. Gard and Jaroslav Zaruba, Goshen, Io.

310,409. SPRING-HINGE. — William Gilfillan, New Haven, Conn.

310,421. BURGLAR-ALARM. — Horace T. Helmbold, Philadelphia, Pa.

310,432. AUTOMATIC FIRE-EXTINGUISHER. — Chas. L. Horack, Brooklyn, N. Y.

310,437. GRATE-FRONT.—E. A. Jackson, New York, N. Y.

310,445. HEATING APPARATUS.—Eduard Kraschovitz, Reudnitz, near Leipsic, Germany.

310,450. DRAUGHTSMAN'S DIVIDING-INSTRUMENT. —Phœbe S. Marks, 13 I Cornwall Residences, Regent's Park, St. Marylebone, County of Middlesex, Eng.

310,473. BENCH-PLANE. — Wm. Steers, Brattleborough, Vt.

310,481. EASEL.—Thomas C. Vail, Topeka, Kans.

310,514. GRATE.—John W. Houston, Bellaire, O.

310,529. FLUSHING-SIPHON. — Harvey C. Lowrie, Denver City, Col.

SUMMARY OF THE WEEK.

Baltimore.

DWELLINGS. — W. L. Stork, Esq., is to have erected twenty-two (22) three-st'y and mansard marble and brown-stone dwells., near Boundary Ave., com. cor. Bolton St., 16′ 6″ x 65′ and 18′ x 65′, and 20′ x 65′, to cost about $110,000; from designs by Wm. F. Weber, architect.

BUILDING PERMITS. — Since our last report nine permits have been granted, the more important of which are the following: —

E. W. Haviland, 6 two-st'y brick buildings, e s Stockton Alley, n of Mosher St.

Morgan & Bro., 12 two-st'y brick buildings, e s Hanover St., n of Cross St.

Frank Gunterman, three-st'y brick buildings, s s Henrietta St., bet. Sharp St. and Peach Alley.

Boston.

BUILDING PERMITS. — *Shawmut Ave., No.* 771, dwell., 20′ x 40′; C. W. Geiler, owner.

Richfield St., near Columbia St., dwell., 22′ x 30′; N. M. Robbins, owner and builder.

Dudley St., No. 434, wooden storage, 12′ x 25′; Ed. H. Rice, owner; Michael Quinn, builder.

Washington St., near Keyes St., wooden dwell., 21′ x 30′; Hannah Kennedy, owner; Michael Kennedy, builder.

Falcon St., near Putnam St., wooden stable, 20′ x 25′; Mary A. F. Lambert, owner.

Savin St., near Warren St., wooden dwell., 24′ x 30′; Lorenzo Base, owner.

Centre St., near Pynchon St., wooden store, 20′ x 24′; H. B. Grant & M. Sargent, owners; Richardson & Young, builders.

Granite St., near Mt. Washington Ave., wooden storage of scenery, 50′ x 100′; Boston Manufacturing Corporation, owners; N. S. Wilbur, builder.

Swett St., opposite Magazine St., wooden storage, 90′ x 256′; Bradley Fertilizing Co., owner; C. Feldon, Jr., builder.

North First St., No. 168, wooden storage, 40′ x 44′; Asa P. Moore, owner; Michael Driscoll, builder.

Brooks St., No. 3, wooden mechanical building, 15′ x 30′; John D. Finn, owner; G. G. White, builder.

Ashland St., wooden church, 43′ x 71′; Rosendale Baptist Church Society, owners; Alex. Rogers, builder.

Florence St., wooden church, 43′ x 71′; Rosendale Baptist Church Society, owner; Alex. Rogers, builder.

South St., wooden stable, 30′ x 80′; C. W. Clapp & Co., owners.

North Second St., No. 186, wooden stable, 30′ x 80′; S. Pinnell, owner.

Ashley Ave., No. 28, wooden store and stable, 18′ x 22′; G. B. Green, owner and builder.

Cottage St., wooden shed, 22′ x 50′; Lewis S. Andrews, owner; F. W. Webster, builder.

Holburn St., 2 wooden dwells., 36′ x 105′; Geldert & White, owners and builders.

Seaver St., No. 266, wooden wagon-shed, 16′ x 20′; Augustus Packer, owner.

Elm Hill Ave., wooden wagon-shed, 16′ x 20′; Augustus Packer, owner.

Blue Hill Ave., wooden dwell., 22′ x 30′; Patrick Daly, owner; J. H. Burt & Co., builders.

Purchase St., cor. Hartford St., brick mercantile-building, 14′ x 42′; L. A. Bullard, owner; Woodbury & Leighton, builders.

Taylor St., brick dry-house, 51′ x 112′; A. T. Stearns Lumber Co., owner; Collins & Morley, builders.

Green St., brick bowling-alley, 51′ x 166′; Patrick Mehan, owner; Daniel Cuvlin, builder.

Oliver St., brick restaurant, 16′ x 266′; L. M. Childs & A. D. McDougall, owners.

Taylor St., brick mechanical building, 29′ x 122′, A. T. Stearns Lumber Co., owners; Collins & Morley, builders.

Clarendon St., brick storage, 15′ x 15′; B. & P. R. R. Co., owner; G. F. Folsom, builder.

Newbury St., 2 brick dwells., 18′ x 22′; Silas W. Morrill, owner and builder.

Brooklyn.

BUILDING PERMITS. — *North Eighth St.*, s s, 150′ e Third St., four-st'y frame (brick-filled) tenement, tin roof; cost, $5,500; owner, John Starkey, 331 Fourth St.; architect, A. Herbert; builders, J. Starkey & Son.

Clay St., Nos. 42 *and* 44, s s, 325′ w Manhattan Ave., 2 three-st'y frame tenements, felt and gravel roofs; cost, $7,200 for both; owner, Thomas Thompson, 361 East Seventy-first St., New York; architect, James Denning; builders, James Nilen and John Costello.

Judge St., No. 10, e s, 110′ n Powers St., four-st'y frame (brick-filled) store and tenement, tin roof; cost, $4,000; owner and builder, Henry Kinn, 8 Judge St.; architect, A. Herbert.

Monteith St., Nos. 53 *and* 55, n s, near Bremen St., 2 three-st'y frame (brick-filled) tenements, tin roofs; cost, each, $4,200; owner, Henry Stubing, Monteith St.; builder, Henry Kempf.

North Eighth St., No. 443, n s, 200′ e Third St., four-st'y frame (brick-filled) tenement, tin roof; cost, $5,500; owner, Matthew Smith, on premises; architect, A. Herbert; builder, not selected.

North Ninth St, s s, 150′ w Fifth St., four-st'y frame (brick-filled) tenement, tin roof; cost, $5,600; owner, P. Booden, North Ninth St.; architect, A. Herbert.

Steuben St., w s, 90′ s Park Ave., 3 three-st'y tenements, tin roofs; cost for all, $9,000; owner, James Cary; builders, Long & Barnes.

Steuben St., w s 90′ s Park Ave., 3 three-st'y brick tenements, tin roofs wooden cornices; cost, each, $5,000; owner, James Carey, cor. Clermont and Willoughby Aves.; builders, P. J. Carlin and Long & Barnes.

Fourteenth St., s s, 247′ 10′ w Sixth Ave., 3 two-st'y brick dwells., tin roofs, wooden cornices; cost, each, $2,500; owner and builder, Geo. R. Waldron, 529 Halsey St.; architect, Amzi Hill.

Penn St., s s, 100′ w Broadway, one-st'y brick Municipal Electric Light Co. plant, iron roof; cost, $8,000; owner, Municipal Electric Light Co., 104 Broadway; architect, E. F. Gaylor; builder, James Haughan.

ALTERATIONS. — *Scholes St.*, n s, 75′ w Graham Ave., two-st'y frame extension, tin roof, also beams put in first st'y and entire building filled in with brick; cost, $2,500; owner, Th. Kayser, Graham Ave., near Scholes St.; architect, John Platte; builder, Ulrich Maurer.

Nevins St., s w cor. Baltic St., raise roof 5′; also, one-st'y frame extension, gravel roof; cost, $3,000; owner, John S. Loomis, cor. Nevins and Baltic Sts.; architect and builder, John P. Free.

South Portland Ave., No. 52, first flight stairs rebuilt and house retrimmed; cost, $6,000; owner, A. A. Peck, Liberty St., n w Nassau St., New York; architect, R. H. Rowden; builders, Jeans & Taylor.

Chicago.

THE YEAR'S WORK.—Commissioner Kirkland reports 3498 permits issued for the year ending December 31, 1884; number of buildings, 4169, with 98,782 feet frontage; cost, $20,857,300, requiring an estimated outlay of $26,071,625.

The increase for the year over that of 1883 numbers 294 permits, 83 buildings, and an increased cost of $3,909,015. The large difference in cost is accounted for by the unusually large number of office-buildings and other expensive structures.

Among the more important buildings are the following: —

Armour, Kent & Bensley, office-building; cost, $1,000,000.

Home Insurance Co., office-building; cost, $390,000.

J. M. Loomis, office-building; cost, $300,000.

Chicago Opera-house Co., opera-house; cost, $500,000.

Marshall Field, office-building; cost, $400,000.

John Q. Adams, office-building; cost, $135,000.

P. C. & S. L. Brooks, office-building; cost, $250,000.

W. D. Kerfoot & Co., office-building; cost, $80,000.

Western Theological Seminary; cost, $75,000.

Chicago Gas-Light Co., tank; cost, $50,000.

J. K. Fisher, building; cost, $50,000.

F. A. Kennedy & Co., bakery; cost, $50,000.

Heissler & Gung, bakery; cost, $60,000.

Gottfried Brewing Co., brewery; cost, $100,000.

H. Beidler, factory; cost, $60,000.

Washington Bou. Skating Rink Co.; cost, $50,000.

A. F. Troescher, warehouse; cost, $70,000.

M. Ryerson, warehouse; cost, $50,000.

Mrs. McCormick, warehouse; cost, $75,000.

Thos. Moran, flats; cost, $60,000.

F. C. Porter, flats; cost, $60,000.

C. B. Blair, store; cost, $100,000.

New England Insurance Co., store; cost, $55,000.

J. P. Atwater, stores; cost, $50,000.

P. Hoenschofen, stores; cost, $50,000.

Conrad Seipp, stores; cost, $50,000.

Armour, Dole & Co., building; cost, $80,000.

H. B. Foss, dwells.; cost, $60,000.

U. P. Smith, dwells.; cost, $80,000.

J. Beecher, dwells.; cost, $50,000.

Board of Education, school-house; cost, $75,000.

Board of Education, school-house; cost, $50,000.

BUILDING PERMITS.—Board of Education, three-st'y school-house, 2527-2545 Lime St.; cost, $40,000; architect, J. J. Flanders; builder, D. H. Wilkie.

Baird & Bradley, 2 three-st'y dwells., 1507 and 1507½ Michigan Ave.; cost, $15,000; architect, H. L. Gay; builder, D. H. Wilkie.

D. R. Fraser, 2 two-st'y dwells., 390 and 392 Warren Ave.; cost, $9,000; architects, Cobb & Frost; builders, Angus & Gindele.

D. McGowan, two-st'y dwell., 71 North Leavitt St.; cost, $3,000; architect, Wm. Strippelman.

P. C. Brooks, twelve-st'y office-building, 282-288 Clark St.; cost, $220,000; architects, Burnham & Root.

Thos. Carey, two-st'y dwell., 263 Webster Ave.; cost, $3,000.

Western Art Association, panorama-building, 127-131 Michigan Ave.; cost, $28,000; architect, J. M. Carreere; builder, J. W. Garvey.

A. Geiss, four-st'y factory and dwell., 96 Wendell St.; cost, $10,000.

Fred. Rose, store and dwell., 951 West Madison St.; cost, $4,400.

Detroit.

BUILDING PERMITS. — R. Nelson, 2 brick houses, Fourth St.; cost, $5,500.

W. B. Wesson, brick hotel, Woodbridge St.; cost, $13,000.

C. C. Hodges, residence, cor. Woodward and Bradshaw Aves.; cost, $7,200.

D. Brooks, brick mill, cor. Warren Ave. and Fifteenth St.; cost, $6,000.

John Waterfall, brick house, No. 507 Cass Ave.; Ave.; cost, $7,500.

N. Mitchell, five-st'y brick block, Woodbridge St.; cost, $20,000.

Donaldson & Meur, architects, brick building for American News Co.; cost, $25,000.

Brick residence for Mrs. Green, Joy St.; cost, $9,000.

Brick residence for T. A. Wadsworth, McDougall Ave.; cost, $7,000.

J. Waterfall & Son, 3 houses, Cass Ave.; cost, $20,000.

Mrs. Jacober, 2 brick stores, Gratiot Ave.; cost, $5,000.

Mrs. N. Williams, brick house, Larned St.; cost, $5,000.

Schmidt & Co., block two-st'y brick dwells., Eighth St.; cost, $12,000.

Mrs. Dudley, 2 brick houses, Second St.; cost, $11,000.

Thomas Manning, brick house, Miami Ave.; cost, $6,000.

John Edwards, brick house, Elliott St.; cost, $7,500.

John Edwards, 3 brick houses, Nos. 46–48 and 50 High St.; cost, $17,000.

No new buildings of any importance being projected at present. Building operations unusually dull this fall.

New York.

OUTLOOK. — Prospects are very problematical, little actual work is on the architects' board, but a good many alterations are projected.

PARTNERSHIP. — Mr. H. Edwards-Ficken has associated with himself Mr. Edward H. Clark, late with McKim, Mead & White. The firm address being H. Edwards-Ficken & Edward H. Clark, Architects, Office No. 19 West Twenty-second St., N. Y. Mr. Clark used to be in charge in Mr. McKim's.

STORE. — On Chambers and Rose Sts., a six-st'y building, with a frontage of 118′ on Chamber St., and 78′ on Rose St., is to be built for occupancy by the Mutual News Co.; from plans of Mr. Thos. R. Jackson, Mr. Michael Giblin.

HOUSES. — On the n s of One Hundred and Twenty-Third St., w of Mount Morris Ave., Mr. Anthony Smyth will have 3 three-st'y and basement brown-stone houses, 18′ to 19′ frontages, built from plans of Messrs. Cleverdon & Putzel, and from plans of same architects, Mr. T. O. Wright will have 4 three-st'y and basement brown-stone houses, 18′ to 19′ frontage, built on the n s of One Hundred and Thirtieth St., com. 225′ w of Sixth Ave.

BUILDING PERMITS. — *Jerome Park*, 3 frame stables, wood roofing; cost, each, $1,500; owner, Jerome Park Villa Sites Improvement Co., W. R. Travers, president, 3 West Thirty-eighth St.; architect, W. H. Smith; builder, R. H. Casey.

West Eighty-third St., No. 371, five-st'y brick flat; tin roof; cost, $30,000; owner, Thomas Cochrane, 223 West Thirty-sixth St.; architects, D. & J. Jardine.

Madison St., Nos. 313 *and* 315, 2 five-st'y brick and stone tenements, tin roof; cost, each, $15,000; owners, M. J. and D. F. Mahony, 52 New Bowery; architects, Babcock & McAvoy.

Elton Ave., e s, 150′ n One Hundred and Sixty-first St., two-st'y frame dwell., tin roof; cost, $2,800; owner, Steven Garland, 759 East One Hundred and Sixty-third St.; architect, Samuel Garland; builder, John Y. Anderson.

Forsyth St., No. 152, five-st'y brick tenement and store, tin roof; cost, $15,000; owner, Henry Gottleib, 2 Second St.; architect, Julius Boekell.

Seventh Ave., s w cor. One Hundred and Thirty, fifth St., 8 three-st'y brick dwells., tin roofs; cost, each, $6,000; owner, Patrick J. O'Brien, One Hundred and Forty-third St., near Eighth Ave.; architect and builder, Richard R. Davis.

Third Ave., s e cor. One Hundredth St., 2 five-st'y brown-stone front tenements and stores, tin roofs; cost, each, $20,000 and $18,000; owner, P. H. McManus, 110 East Ninety-first St.; architect, John Brandt.

Twenty-sixth St., s s, 225′ w Ninth Ave., 3 five-st'y brick tenements, tin roofs; cost, each, $18,000; owners, Watkins Bros., 304 East Forty-first St.; architect, F. T. Camp.

East One Hundred and Thirteenth St., five-st'y brick tenement and store, tin roof; owner, Bridget S. Sullivan, 412 East One Hundred and Thirteenth St.; architect, Andrew Spence.

West Twenty-ninth St., No. 221, five-st'y brick tenement, tin roof; cost, $9,000; owners, C. & J. O'Neil, 242 West Thirty-seventh St.; architect, John F. Wilson; builder, day's work.

Third Ave., w s, 125′ 7″ s One Hundred and Sixty-fifth St., four-st'y frame tenement and store, tin roof; owner, P. Garvin, 837 Cauldwell Ave.; architect, Aug. Schmidt.

First Ave., e s, 25′ n Forty-fourth St., one-st'y brick Slaughter-House, tin or gravel roof; cost, $8,000; owner, Marcus Fleischhauer, 348 East Fiftieth St.; architect, John McIntyre.

One Hundred and Thirty-third St., s s, 300 e Willis Ave., one-st'y frame dancing pavilion, tin roof, lessee, Aug. Baur, One Hundred and Thirty-second St. and Willis Ave.; architect, J. H. Valentine.

East Fifty-first St., No. 351, five-st'y brick tenement, tin roof; cost, $18,000; owner, Horace W. Fuller, 114 East Thirty-eighth St.; architect, W. R. Smith; builder, day's work.

East Eightieth St., Nos. 111, 113 *and* 115, 3 four-st'y brown-stone front dwells., metal roofs; cost, each, $13,000; owner and builder, James Brady, 109 East Eightieth St.; architects, N. Le Brun & Son.

ALTERATIONS. — *Walker St., Nos.* 72, 74, *and* 76, internal alterations, such as new stairs, new elevator, steam heating, etc., cost, $20,000; owner, Dr. Henry H. House, by his agents, Butler, Matthews & Co., 149 Broadway; architect, John McIntyre; builder, day's work.

Willoughby St., n w cor. Bridge St., put in a tier of iron beams and put on new roof, etc.; cost, $6,000; owner, Jacob Ruppert, on premises; architects, A. Pfund & Son.

Ninety-second St., n s, 85′ w Second Ave., lower present roof and put on an additional roof, raise walls about three feet; cost, $3,000; owner, George Ehret, on premises: architect, A. Pfund & Son.

West Forty-second St., No. 115, one-st'y brick extension, tin roof; cost, $5,247; owner, R. S. Williams, 51 West One Hundred and Twenty-seventh St.; architect, J. F. Miller; builders, E. W. Gardiner and Thos. Wilson.

Third Ave., Nos. 1633 *and* 1635, put on a new roof, new iron beams, 5 new windows in wall; cost, $6,000; owner, Jacob Ruppert, 1639 Third Ave.; architects, A. Pfund & Son.

Third Ave., e s, 212′ s One Hundred and Sixty-Ninth St., raise one-st'y rebuild south wall., etc., cost, $5,400; owner, David Mayer, 1304 Fifth Ave.; architects, Schwarzmann & Buchman; builders, List & Lennon.

East Forty-fourth St., Nos. 331 *and* 333, raise second st'y, new flat roof; cost, $3,500; owner, Frederick Oppermann, Jr., 154 East Forty-sixth St.; architect, Charles Stoll.

First St., Nos. 38–42, four-st'y and attic brick extension, tin and slate roofs; cost, $67,000; owner, City of New York, by Stephen A. Walker, president Board of Education, 8 East Thirtieth St.; architect, D. J. Stagg; builder, Joseph Spears.

Elizabeth St., s e cor. Hester St., repair damage by fire; cost, $4,500; owners, Simon Bing, Jr., 130 East Seventy-fourth St., and Jacob Bookman, 9 East Sixty-second St.; architect, Wm. Graul.

One Hundred and Twenty-seventh St., s s, 150′ w Third Ave., three-st'y brick extension, tin roof; cost, $5,000; owner, Thos. W. Beacom, 640 East Eleventh St.; architect, Chas. Baxter.

Ninety-seventh St., Nos. 210, 212 *and* 274–294, build brick piers in cellars to support girders and repairs; cost, $5,000; owner, Washington Life Ins. Co., 21 Courtlandt St.

Water St., No. 61, repair damage by fire; cost, $4,700; owner, John H. Caswell, exr., 11 West Forty-Eighth St.; builder, Lewis H. Williams.

Fifty-first St., Nos. 103 *and* 105, put in iron girders and posts in first st'y, etc.; cost, $3,000; owner, The F. & M. Schaefer Brewing Co., 112 East Fifty-first St.; architect, J. Kastner.

Broadway, No. 540, five-st'y and basement extension, metal roof; cost, $30,000; owner, Thos. Lewis, 582 Lexington Ave.; architect, John B. Snook; builder, not selected.

Fifth Ave., No. 254, lower floor take out partitions, new store front with iron girders, posts, etc.; cost, $5,000; owner, Julia M. Coggill, Richmond, Va.; architects, Berger & Baylies; builder, M. Magrath,

Philadelphia.

BUILDING PERMITS.—*Meehan St.*, between Musgrove and Chew Sts., 2 two-st'y dwells., 15′ x 28′; Andrew Brachbold, contractor.

Waterloo St., No. 2312, two-st'y dwell., 18′ x 37′; Wm. Kutz, contractor.

South Third St., Nos. 255 *and* 257, six-st'y factory, 40′ x 181′; E. Cubberly, contractor.

Bowzier St., above Columbia Ave., three-st'y dwell., 14′ x 48′; G. G. Gandy, contractor.

Tulip St., between Washington and Tyson Sts., frame church, 30′ x 50′; Wm. W. Milner, contractor.

South St., No. 190, one-st'y building, 20′ x 40′; Jas. G. Miller, owner.

Fifteenth St., e s, below Washington Ave., two-st'y box-factory, 36′ x 40′; D. M. Hess, owner.

Columbia Ave., between Twenty-fifth and Twenty-sixth Sts., two-st'y stable, 16′ x 40′; Michael Cooney, owner.

Juniper St., below Pine St., altering dwell. to stable, 16′ x 85′; Gulbat & Keefer, contractors.

St. Louis.

BUILDING PERMITS. — Twenty-five permits have been issued since our last report, five of which are for unimportant frame houses. Of the rest, those worth $2,500 and over are as follows:—

Mary E. Kelly, two-st'y brick dwell.; cost, $2,500; contract sublet.

J. H. Wyth, two-st'y brick forge; cost, $2,500; A. J. Cramer, contractor.

Mrs. M. Curtis, two-st'y brick dwell.; cost, $5,500; J. W. Barnes & Co., contractors.

F. Fischer, two-st'y brick store and tenement; cost, $7,000; C. Schwartzkoph, contractor.

J. B. Cella, three-st'y store and offices; cost, $7,000; G. D. Fitzgibbons, contractor.

I. W. Morton, two-st'y brick dwell.; cost, $22,000; Peabody & Stearns, architects; Samuel Morrison, contractors.

Toledo.

THE past season has been a fairly good one for building interests in this locality. Quite a large number of moderate-priced buildings are in progress, operations being interrupted by decidedly wintry weather, which is upon us. Wages rule low. Many good mechanics are unable to obtain employment at any price. The tendency of prices for building materials is toward depression, and the outlook for the coming year is, that building will be cheap; too cheap, maybe, to indicate commercial health. There is, of course, a logical reason for the fact that the most building in our cities is projected and accomplished when labor and materials are held at high prices.

BUILDING PERMITS. — *Parkwood St.*, cor. Woodruff Ave., two-st'y and basement brick dwell., for Chas. F. Milburn; cost, about $6,500; N. B. Bacon, architect; Jas. Hales, builder.

Jefferson St., near Eleventh St., two-st'y brick dwell., for Thos. Dunlap; cost, about $4,000; A. Liebold, architect.

Ontario St., block of 3 two-st'y brick dwells., for Wm. C. Tate; cost, about $9,000; A. Liebold, architect; P. K. Tappan, builder.

St. Clair St., brick business block, 50′ x 120′, three stories high, for J. T. Newton; cost, about $14,000; J. E. Morehouse, architect; Schall & Costello, contractors of brickwork.

General Notes.

CLEVELAND, O. — Mr. Geo. F. Hammond, architect, late of Boston, has formed a co-partnership with Alexander Koehler, Esq., under the firm name of Koehler & Hammond, with offices in the City-Hall Building, Superior St.

CONNERSVILLE, IND.—Hodgson, Wallingford & Stem, Indianapolis, have residence for A. M. Andrews; cost, $3,000.

DESERONTO, ONTARIO. — F. S. Rathbun will commence a brick house soon, to cost $6,500, from plans by Palliser, Palliser & Co., architects, New York.

ELIZABETH, N. J.—The corner-stone of a high school building of brick, was laid December 10th, with appropriate ceremonies, W. H. Meeker, secretary, Board of Education; Palliser, Palliser & Co., architects, N. Y.

HADDONFIELD, N. J. — C. H. Mann, of Philadelphia, country house; cost, $7,500; Palliser, Palliser & Co., architects, New York.

NEWPORT, VT. — The citizens of Newport have guaranteed $5,000 for the new County Buildings to be built there.

ROCHESTER, N. Y. — Messrs. Walker & Nolan, architects, have prepared plans for a new chapel to be erected in the rear of St. Paul's Church. It will be a frame structure, with an auditorium 36′ x 45′.

Plans for the new Government building have just been received from Washington. Bids will be received by Architect Ellis up to the middle of this month.

Plans are being prepared by resident architects for a new jail-building, to cost $60,000, and located on Exchange St.

ROCKVILLE, CONN.—Henry Adams is building a frame house; cost, $15,000.

Mr. Skinner is to build a frame residence, to cost $4,000, from plans by J. M. Currier, Springfield, Mass.

SHERRIL'S MOUNT, IO. — It is announced that a new Catholic Church is about to be erected at Sherril's Mount, a few miles north of Dubuque; to cost upward of $20,000.

STATEN ISLAND, N. Y. — Skating-rink, 250 feet long by 50′ wide; also brick building, 50′ x 50′, two-st'y; club rooms, etc., for George Bechtel, Staten Island, to cost $50,000; plans and designs by I. M. Merrick, New York, N. Y.

Fire-proof building, 25′ x 50′, two-st'y; for county clerk, Richmond Co., N. Y.; I. M. Merrick, architect.

ST. PAUL, MINN. — F. L. Chapman, two-st'y frame dwell., n s of Holly St., bet. Dale and Kent Sts.; cost, $3,500.

A. J. D. Haupt, two-st'y frame dwell., n s of Portland St., bet. Grotto and Avon Sts.; cost, $2,600.

Episcopal Mission, two-st'y frame double dwell., e s of Rice St., bet. Summit and College Sts.; cost, $5,000.

WASHINGTON, D. C. — A two-st'y and basement brick and stone school-house, 50′ x 60′, is to be built for the Columbia Institution for the Deaf and Dumb, at a cost of about $20,000; from designs of the architect of the Institution, Mr. Fred. C. Withers, of New York.

WATCH HILL, R. I. — Five cottages are to be built here for Wayne Griswold, Esq., of New York City, to be occupied next summer; Palliser, Palliser & Co., architects, New York.

WATCHSHELL, R. I.—Miss Adams, of Baltimore, is to have erected a two-st'y frame artists' studio, 30′ x 35′, from designs by Messrs. Wyatt & Sperry, architects, Baltimore.

WATERBURY, CONN. — Dr. Alfred North, house on North Main St.; cost, $6,000.

W. E. Risley, cottage; cost, $5,500.

Mrs. Dr. Dougherty, house; cost, $6,000.

C. B. Webster, house; cost, $10,000.

Palliser, Palliser & Co., architects, Bridgeport, Conn.

WEIRS'S STATION, N. H.—The railway station at the Weirs is to have an addition of 100′ two-st'y, the first floor to be finished off as a first-class restaurant; in the second story there will be offices and sleeping-rooms.

WESTTOWN, PA. — The Building Committee of the Westtown boarding-school of the Orthodox branch of the Society of Friends report that they have the sum of $192,000 subscribed of the $250,000, towards building the new school on their property in Westtown Township. The committee feel safe now to commence building, and the plans will be finally adopted in a few days. The structure will probably be of brick.

WORCESTER, MASS. — Worcester is suddenly thrown into a ferment because some of its leading citizens, notably Joseph H. Walker, have prepared a communication of a few lines to the City Council, asking for a new city hall, which shall cost not less than $300,000.

Ransom C. Taylor has bought the Front Street estate of the Osgood Bradley heirs, opposite the Common, and will improve it by the erection of a business block next season.

A new armory is to be built here, probably at the junction of Bridge, Mechanic and Foster Sts.

WINCHESTER, VA.—A brick Baptist church, 35′ x 60′, with a seating capacity of 350, and to cost $5,000, is to be erected here; from designs by J. A. & W. T. Wilson, architects, Baltimore.

WINONA, MINN.—The Bohn Manufacturing Company are now arranging to build a new saw-mill.

COMPETITION.

COURT-HOUSE.

[At Toronto, Can.]

TORONTO, December 23, 1884.

Designs, in competition for a court-house, to be erected on Queen St., at the head of Bay St., in the City of Toronto, will be received by the Court-House Committee of the City Council **up to noon of Wednesday, the 23d day of March, 1885.**

Premiums will be awarded as follows: "First prize the carrying out of the works as set forth in the instructions; second, $500; third, $400; fourth, $200."

All further information can be had on application at the City Clerk's Office, City-Hall Buildings, Toronto.

DAVID WALKER,
Chairman Court-House Committee.

PROPOSALS.

FURNITURE.

[At Cincinnati, O.]

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
WASHINGTON, D. C., January 10, 1885.

Sealed proposals will be received at this office **until 2 o'clock, P.M., on Friday, January, 23, 1885,** for manufacturing and placing in position in complete working order, certain furniture for the post-office in the new custom-house building at Cincinnati, O., and also for U. S. buildings under control of this Department in various cities east of the Rocky Mountains, in accordance with the drawings and specifications, copies of which may be seen either at this office, or at the office of the custodian, custom-house, Cincinnati, O., where any additional information may be obtained.

The Department reserves the right to reject any or all bids or part of bids, and to waive defects.

Bids should be addressed to the Secretary of the Treasury, and endorsed "Proposals for furniture for Cincinnati," and "Proposals for furniture for various U. S. buildings east of the Rocky Mountains."

473 H. McCULLOCH, Secretary.